PORTALS POTPOURRI With the plethora of choices, how do you know which portal technology is best for you? Page 34.

VPN TALLY New Lucent VPN hardware (left) will bolster security, while Check Point eases VPN installations. Page 14.

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NetworkWorld

May 21, 2001 Volume 18, Number 21

The network portal: www.nwfusion.com

ABOUT-FACE!

Proponents of IPv6 are backpedaling on claims that the long-anticipated technology can solve all of the 'Net's problems.

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ANDREW SACKS

It's back to basics at DOT-COM BOOT CAMP

Jon Zeeff, CTO at SolidSpeed Networks, trains hard prior to hitting the venture capital circuit. Page 42

Power grids get jolt of net mgmt.

BY ELLEN MESSMER

With summertime blackouts looming in California and elsewhere, the power industry acknowledges it has no network management technology to get a shared, real-time view of electricity flows or predict bottlenecks across the nation's three main grids.

That's all about to change.

Those three transmission grids, which are independently operated and date to the 1970s, have seen volumes grow from 200,000 bulk electricity transactions four years ago to 1.5 million last year as deregulation spurs new buying and selling patterns. The two larger grids are known as the Eastern and Western Interconnections; the third, just for Texas, is called the Electric Reliability Council of Texas (ERCOT).

An advanced Web-based risk-management system called the

See **Energy**, page 68

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POWER UP

Read about the Electric Power Research Institute's Power Delivery Reliability Initiative.

DocFinder find it 4358 online

Novell caching spinoff no cash cow

Volera losing partners amid layoffs and an attempt to change sales model.

BY DENI CONNOR

SAN JOSE — As battered Novell preps to report quarterly earnings this week, there is mounting evidence that a key component of the company's recovery blueprint — a caching spinoff called Volera — has been merely spinning its wheels.

Novell officials are said to be in a "panic" about the upcoming financial filing, and reports are swirling that a fresh round of layoffs may be announced as soon as this week, sources say.

Volera — launched three months ago and backed by more than $80 million from Novell, Nortel Networks and Accenture — is said to be earning less than $2 million per quarter from sales of its Excelerator caching products. Among the signs of trouble:

- Compaq recently switched from selling Volera's caching products to peddling those made by Inktomi. Dell is expected to soon follow suit.
- Two weeks ago, Volera fired Robert Page, vice president of global sales, and laid off 13% of its 175 employees. More layoffs are said to be imminent.
- Edgix, a content delivery company co-founded by Volera CTO Drew Major — Novell's legendary technologist — is

See **Volera**, page 66

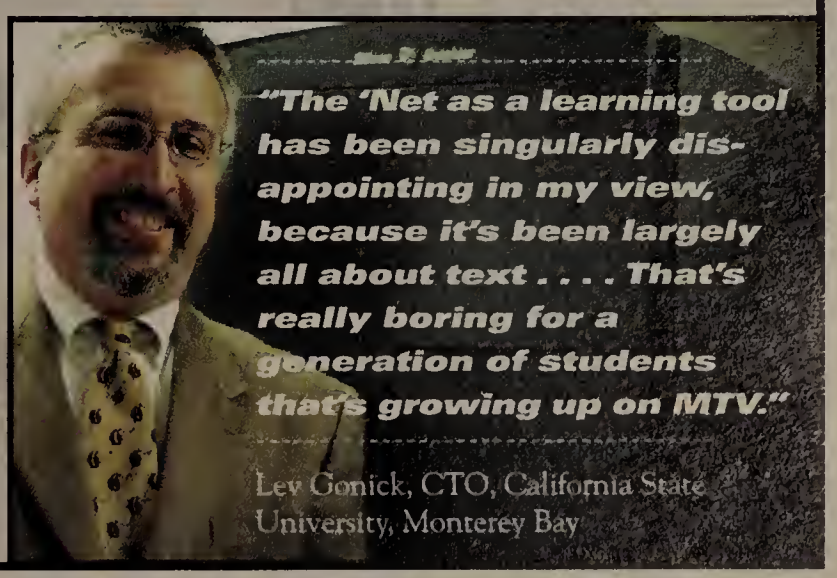
IP: Big protocol on campus

Universities are making the most of advanced IP multimedia services.

BY PHIL HOCHMUTH

While wireless on-demand IP video, long-distance and international IP telephony and Web-based unified messaging applications may be long-term projects or even pipe dreams for some enterprise IT departments, such services are a reality for students, faculty and staff on college campuses around the country.

See **Colleges**, page 67



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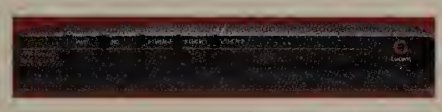
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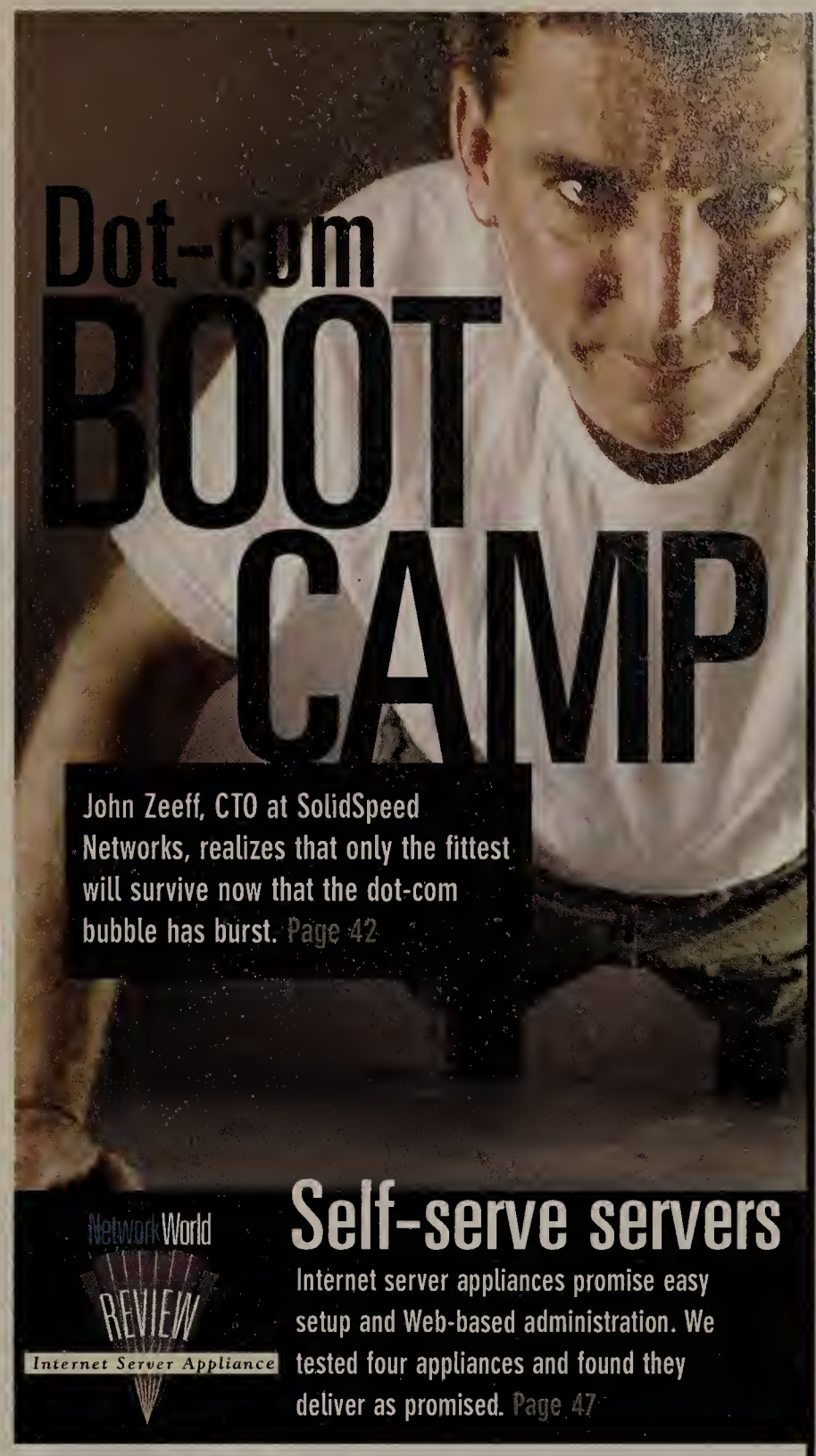
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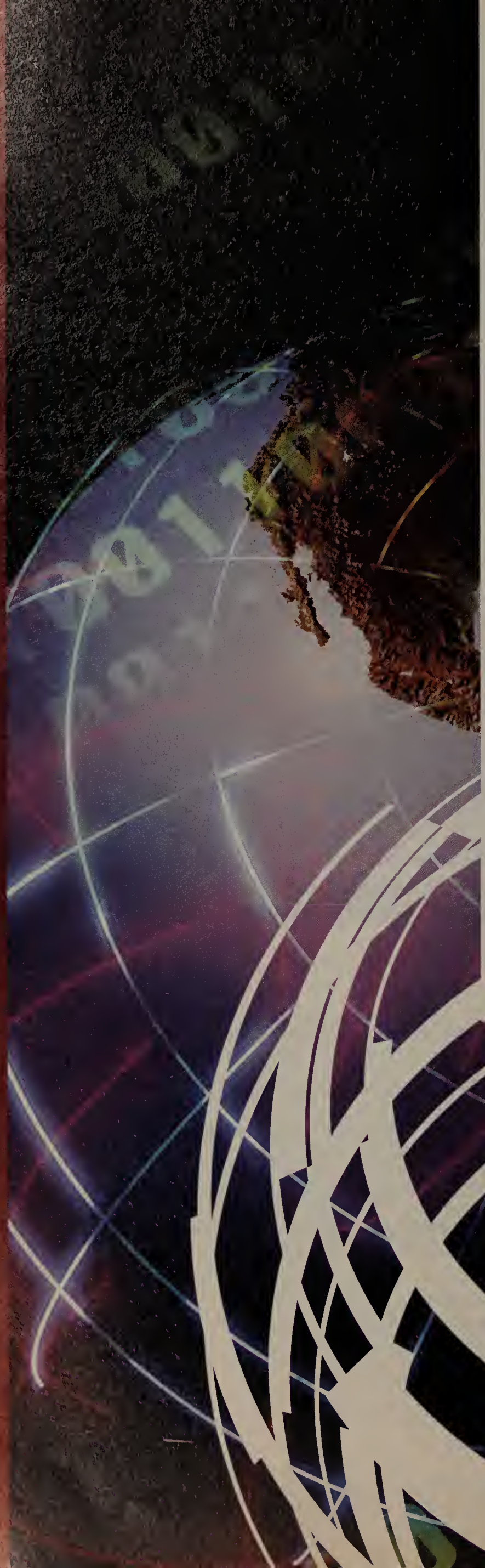
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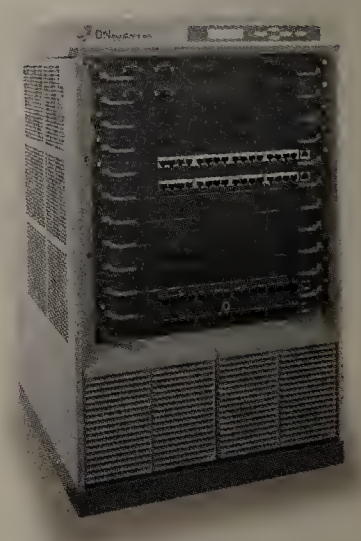
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THIS WEEK ONLINE

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INTERACTIVE

Rave reviews?

Our editors are plowing through the books on our Net.Worker Reading Room list. See which telecommuting, remote-access and SOHO books they recommend — and which they don't. **DocFinder: 4338**

RESEARCH

A point above poor

New Test Pilot swileycoyote didn't think much of the Avaya Cajun P550 switch. Read his review — and a response from Avaya. **DocFinder: 4339**

We light the way

Optical networking is a hot new topic. Keep on top of it with our Optical Networking Breaking News page — the latest optical news from *Network World* and around the 'Net. **DocFinder: 4340**

NEWS

You are the weakest link

Steve Janss warns that teleworkers may become the targeted problem in a corporate security plan in the near future. See his security advice for protecting your remote workforce. **DocFinder: 4341**

News alerts

Network World now offers six focused e-mail News Alerts to keep you abreast of the most significant developments of the week on LANs, Storage, Network/Systems Management, The Edge, Cisco and Microsoft. Sign up today. **DocFinder: 4337**

Secure your businesses

Join *Network World* for a one-day event, "The Changing Face of Information Security." Find out how to protect your valuable information assets — and your future growth. **DocFinder: 4342**

Getting NetSmart

Training is just one part of being a good manager. To find out about the other parts, check out some management picks in the NetSmart Bookstore. **DocFinder: 4343**

CARUSO'S CACHE



The best of the Netflash daily newsletter

Rollout of '.info' and '.biz' suffixes begins

Get ready for the next big online boom. Now that the new ".biz" domain names are about to go up for grabs, companies will scramble to ride the dot-biz wave, throwing traditional business models out the window and living on filet mignon and venture capital. Now, you may be wondering how the dot-biz craze will avoid the pitfalls of the dot-com boom and bust. Well, this is totally different! It's not dot-com — it's dot-biz! Don't you see?

Seriously, though, because many of the survivors of the dot-com era now own multiple domain names (such as Petsmart.com owns the Pets.com domain now that the sock puppet has gone to a better place), new businesses may have to turn to .biz just to find something that's not taken. Reserve your domain this month, and it can be up by October: **DocFinder: 4352**

New worm masquerades as virus warning

Can you trust anyone anymore? An e-mail-borne worm that says it's from antivirus software vendor Symantec is tricking people into infecting their computer and those around them. However, the worm doesn't do any serious damage — except to Symantec's reputation. **DocFinder: 4355**

Research firm predicts the Web will die

Forrester Research is calling the World Wide Web "dumb" and "boring." Well, of course most of it is. I didn't need a big research firm to tell me that. But is the Web doomed to extinction? You be the judge. **DocFinder: 4356**

Start-up Tahoe Networks gets $38 million

It may not seem like much, but Tahoe Networks has assembled an interesting team and is in a very interesting market. It's focusing on linking wireless networks to the Internet, and it must be doing something right to get funding in this lackluster economy. **DocFinder: 4357**

— Jeff Caruso, managing editor, online news

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COLUMNISTS

Compendium

Destroying more than just Linux



Fusion Executive Editor Adam Gaffin finds us 10 reasons to quit the forum junkie producing Slashdot now. **DocFinder: 4344**

Help Desk

Ron Nutter helps a user install FTP on his company's NetWare 4.11 servers worldwide. **DocFinder: 4345**

Bleeding Edge

Beefing about broadband



Edge columnists Daniel Briere and Beth Gage wonder what broadband consumers are getting. And more importantly for service providers, what are they paying for? **DocFinder: 4346**

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NEWS BRIEFS, MAY 21, 2001

MasterCard pushes security envelope

MasterCard International last week announced two security-related services available under its brand name that may be offered by MasterCard banks to online merchants. The first, called MasterCard Site Data Protection Services, combines several security services, including a "Best Practices" guide, a security alert service and an automated security scan of the Web site, with help from security vendors Ubizen and Predictive Systems. MasterCard is also partnering with insurance firm Marsh to offer so-called Web liability insurance, including coverage for payment-card theft.

Alcatel, Lucent said to be in talks

Telecommunications equipment maker Alcatel is reportedly in negotiations to acquire beleaguered Lucent for about $40 billion, according to *The New York Times*. Headquartered in France, Alcatel previously expressed interest in Lucent's fiber-optic cable business.

Those talks recently expanded to cover all of Lucent's holdings, including the company's renowned Bells Labs. A source told the *Times* there was a 50% chance of the deal being consummated.

ICANN approves .biz and .info

For the first time since the domain name system became operational in the mid-1980s, a pair of new top-level domain registries have been approved. The Internet Corporation for Assigned Names and Numbers (ICANN) finalized accreditation agreements with the new .biz and .info top-level domain registries last week.

"This is a momentous step forward in the continuing evolution of the Internet's domain name system," said Vint Cerf, chairman of the ICANN board of directors. "However, it is just one step among many in a long process of providing consumers with the benefits of competition through a variety of domain name options and services." Dot-info will be an unrestricted top-level domain, open to any business or person to register for any purpose. Dot-biz will be a restricted top-level domain open only for commercial or business purposes.

Murphy resigns as Tivoli president

Tivoli President David Murphy resigned last week to take a position as CEO of an unspecified West Coast e-commerce company. Until a new president is identified, the Tivoli organization will report to Steve Mills, senior vice president at parent company IBM. Murphy joined Tivoli in early 1998 as senior vice president of corporate development.

'Cheese' looks to spread Linux fix

A new worm spreading on Linux systems throughout the world is reportedly trying to do some good. The worm, called Cheese, attempts to fix any damage created by the Li0n worm that plagued Linux servers in March. The CERT Coordination Center issued an incident note about Cheese. Li0n attacked Linux servers running a vulnerable version of the Berkeley Internet Name Domain server, stealing passwords and installing and hiding hacking tools on systems it infected. Once in the system, Cheese changes a number of files and attempts to close the hole, or backdoor, left by Li0n. The attempt to close the backdoor is simplistic and won't work every time, experts say.

Intel trumpets wireless breakthrough

Forecasting a future with gadgets like video watch phones and wearable computers, Intel last week unveiled an experimental chip that combines the core components of today's cell phones and handhelds. The "wireless-Internet-on-a-chip" technology could enable a new era of wireless products with access to the Internet, extensive battery life and greater processing power, Intel said. The company said it has succeeded in merging three manufacturing processes into one. The chip has a microprocessor, flash memory and analog communication circuits on a single piece of silicon built using a single manufacturing process. Traditionally, these components are produced using separate technologies in different factories.

Gerstner drops hint about successor

IBM CEO Lou Gerstner has publicly acknowledged that there is a leading candidate to be his successor: Sam Palmisano, who is now the company's president. Interviewed on CNN by commentator Lou Dobbs, Gerstner said the executive transition at IBM should be "beginning in a very short period of time," although he was not more specific. Gerstner's contract with IBM expires March 1, when he turns 60, and it is believed he will step aside at that time. Gerstner said he and IBM's board of directors have been assembling a management team to run the company after he leaves. "Sam Palmisano is emerging as the leader of a new team," he said.



IBM President Sam Palmisano is apparently next in line for the IBM CEO job.

Intrusion-detection firms push for unified mgmt.

BY ELLEN MESSMER

Leading network security software vendors Internet Security Systems and Symantec are separately developing management systems that work across their product lines. Currently, the companies supply management consoles for products in their expanding vulnerability-assessment and intrusion-detection software portfolios.

Each company is pursuing a unified management strategy in light of significant acquisitions. ISS is about a month away from finalizing a $195 million purchase of Network Ice, a maker of desktop intrusion-detection software. Symantec last year spent $975 million on Axent, a vendor of firewall, VPN, vulnerability-assessment and intrusion-detection products.

Streamlining security

According to IDC, the intrusion-detection software market will more than double to $1.23 billion by 2004, with customers demanding products that scan higher-speed links, have lower overhead and update more easily.

By the third quarter, ISS plans to ship RealSecure Fusion Sensor, software that collects data from the four separate RealSecure database, Web server, operating system and network-based intrusion-detection tools, producing an aggregated presentation of alerts. Currently, alerts can only be collected at separate management consoles.

By year-end, the company plans to help customers dispense with multiple management consoles altogether with a system called RealSecure Site Protector.

A more organized set of management offerings will be important as ISS looks to expand the role played by its intrusion-detection tools.

Mark Woods, director of product management, says ISS wants to enable the Network Ice desktop intrusion-detection software to flag more than just hacker attempts or vulnerabilities. Rather, ISS wants the technology to take on new jobs, such as preventing an end-user's desktop from joining the corporate network until it's been assessed for integrity.

That might mean an intrusion-detection system would need to scan the user's desktop during the authentication process to remotely check it for denial-of-service Trojans or computer viruses. While intrusion-detection software typically checks for Trojans, it usually doesn't scan for viruses. ISS will look at partnering with firewall/VPN vendors and antivirus software makers to extend its new Network Ice products.

Symantec is working to extend the capabilities of its antivirus products, Axent intrusion-detection software and Raptor firewalls, and deliver a common management platform in the next few months.

"With the technologies in our portfolio, we think we can be a lot smarter in how we can get information to our customers," says Gail Hamilton, a Symantec senior vice president.

For example, Hamilton says the company's Raptor firewalls will soon be able to detect a new virus coming through a port and shut down that port if that's what a security policy calls for.

In addition, Symantec is combining features from the Axent network- and host-based intrusion-detection systems to protect applications at the desktop and server.

The efforts under way at ISS and Symantec come as Network Associates is backing out of the intrusion-detection market.

While Network Associates will con- tinue to sell the CyberCop Scanner for vulnerability assessment, it will no longer develop or seek new sales of CyberCop Monitor for sensing hacker activity.

ISS: www.iss.net; Symantec: www.symantec.com

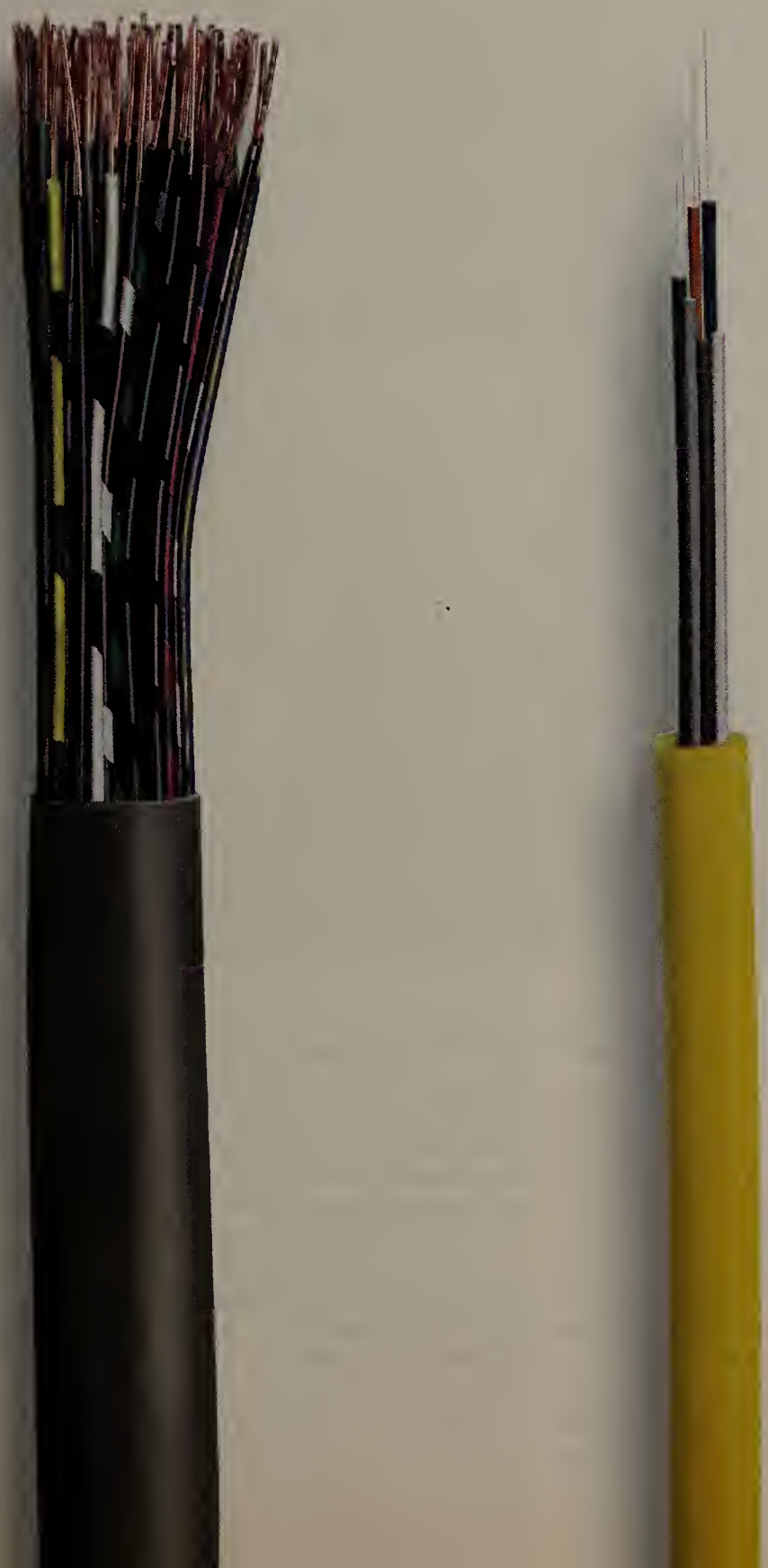
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Vendor gear to enable new IP voice services

Gear from Avaya, StarVox and WebBasis lets providers offer unified messaging, IP Centrex.

BY PHIL HOCHMUTH

Companies that want to adopt IP voice, but are shy about spending a lot on new IP PBX hardware and software, may soon have a slew of outsourced options to choose from instead.

A batch of new hardware/software products, including offerings introduced last week by Avaya, StarVox and WebBasis, could enable service providers to speed delivery of unified messaging, IP Centrex and other voice-over-IP-enabled services. These services could be used to support call centers, converged enterprise voice/e-mail systems or just plain phone service.

"A lot of companies that have multiple sites often end up with multiple messaging systems on their data networks and telephone networks," says Andrew Colby, director of hosted solutions at Avaya. With an outsourced unified messaging service, "a service provider can offer networking capabilities among all these systems."

Avaya's Unified Messaging Solution features software that would be hosted by an application service provider (ASP), competitive local exchange carrier or ISP and provide customers with unified voice mail, e-mail and fax messaging via a single Microsoft Outlook interface. Customers wouldn't need to change their phones for unified messaging services, for which Avaya estimates service providers would charge $17 to $20 per seat.

Ziptone, an ASP in Cedar Knolls, N.J., uses Avaya technology to offer call center, customer relationship management and IP voice application services to small businesses and dot-coms in the Northeast.

"We provide a very complex application, if you consider the number of components that comprise a [customer relationship management] or telephony system," says Dennis Kornbluh, CTO for Ziptone. By offering outsourced services, Kornbluh says his firm can set up a customer with a voice-over-IP or customer-relationship-management system in as little as 10 days. Unified messaging is another application that could ride on top of the firm's existing services, he adds.

High hopes for IP Centrex

IP Centrex could account for as much as 25% of U.S. business telephone lines over the next two years, according to research firm Frost & Sullivan. Traditional Centrex never captured more than 15% of U.S. lines.

IP Centrex services could also start to proliferate, as vendors launch technologies designed to make it easier for service providers to deliver such offerings.

StarVox is offering carriers a combination of a softswitch, voice-over-IP gateway and IP telephones designed to support IP Centrex. Like the original time division multiplexer-based Centrex service, IP Centrex handles all voice call processing, forwarding and switching from a carrier's central office, with phones being the only required customer premises equipment. The company says the service could be used for linking branch offices and telecommuters to any brand of PBX or IP PBX in a main office. StarVox IP Centrex is targeted at offices with up to 100 users, and the company estimates service providers would charge $14 to $18 per seat.

Another firm, WebBasis, has developed technology to enable service providers to offer IP Centrex and unified messaging for about $50 per user to customer sites with up to 1,000 end users. The company's EPIC offering is a combination of Cisco, Hewlett-Packard and Oracle products, including IP phones and application servers, that WebBasis has integrated to support a single portal service that providers can resell to customers. The offering consists of an application called Digital Desktop, which combines e-mail, calendar, instant messaging and voice mail access through a single portal-like Web interface.

WebBasis is working with the American Automobile Association's Northern California regional office to roll out the service on a trial basis.

One analyst says outsourced voice over IP could catch on if providers marketed it as being more than just regular Centrex features over IP.

"There used to be a little bit of a feature gap between traditional Centrex and an in-house PBX solution," says Ron Gruia, an analyst with Frost and Sullivan. "Also, you couldn't configure it exactly the way you wanted it all the time. You had to take what was given to you."

These perceptions should not be tied to IP Centrex, he says, because most new services allow users to make administrative changes via a Web site. ◪

WorldCom VPN package gives users more control

BY DENISE PAPPALARDO

CLINTON, MISS. — WorldCom, which already offers fully managed VPN services, last week launched a VPN service package that puts the management back in users' hands.

The WorldCom IP VPN Select Access Edition service includes dedicated UUNET Internet access, Cisco routers and Cisco policy management software, which can be used to set, enforce and monitor security policies from one site.

"Select Access is for customers that don't want a fully managed, outsourced solution. It's a bundle where customers buy network access, hardware and the tools to provision and manage their own VPN," says Janel Crabtree, WorldCom's director of global IP VPN services.

WorldCom's other VPN offerings include the fully managed IP VPN Total Access and IP VPN Remote Access services, which use dedicated and dial-up Internet access connections, respectively. These services, as well as WorldCom's new Select Access Edition, all support IP Security tunneling and triple digital encryption standard (Triple-DES) 128-bit encryption.

View to a VPN

The WorldCom IP VPN Select Access Edition service at a glance:

Description:	VPN bundled service that includes Cisco gear and WorldCom dedicated Internet access. Customers are responsible for network management after installation.
Available:	In 29 countries throughout Europe, Asia and Latin America.
Bandwidth:	56K bit/sec to 155M bit/sec
Set-up fee:	$3,000
Cisco router price:	$4,600 to $29,500
Monthly fee:	$1,800 per site for a T-1 (1.544M bit/sec) connection. $90,000 per month for an OC-3 (155M bit/sec) connection.

Depending on which analyst you talk to, WorldCom or AT&T is the VPN services market leader, followed by Genuity, Sprint, Savvis Communications, XO Communications and Broadwing.

"WorldCom has done a nice job offering a broad range of VPN services," says Jim Slaby an analyst at Giga Information Group. This latest offering is best-suited for small and mid-size companies or large companies that have "modest site requirements," he says.

Cisco's policy management platform can support up to 500 devices, though Slaby says Cisco's routers don't scale well for handling VPN traffic.

"The platform supports 20 to 30 tunnels well, but anything above that is too burdensome," he says. "Triple-DES can slam a Cisco router if it is supporting many tunnels."

For some users, support for 20 to 30 tunnels for a site-to-site VPN is more than enough. But why should users go to WorldCom for products they can buy directly from Cisco and dedicated Internet access they can buy from any number of providers? What WorldCom offers that users cannot easily get on their own is initial VPN integration and stronger buying power with Cisco, Crabtree says.

This is the first of three VPN services from WorldCom that features Cisco gear. In June or July WorldCom will launch a VPN service managed by SmartPipes (www.nwfusion.com, DocFinder: 4336) that uses Cisco routers and Windows to set, monitor and maintain security policies. Toward the end of the year, WorldCom expects to offer users the option of Cisco gear with its fully managed IP VPN Total Access service. Today, Lucent Access Point gear is the only choice.

WorldCom: www.wcom.com

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ANALYSIS

IBM customers generally bullish about Web services

Most see the possibilities, yet express concerns about a variety of unresolved issues.

BY KATHLEEN OHLSON

IBM customers are expecting major benefits from the company's recently announced Web services plan, such as lower infrastructure costs and easier ways to link to trading partners.

However, they say that Big Blue needs to ensure all its business partners and developers work together to transform e-commerce in the manner the company has outlined.

At a press conference in New York last week IBM outlined Dynamic E-Business, a grand plan to help companies build applications that pull together information from multiple sources.either internally, or externally over the Internet.

For its Web services plan, IBM intends to make the most of its WebSphere, DB2, Tivoli and Lotus products, and improve them with support for emerging standards such as Simple Object Access Protocol (SOAP); Universal Description, Discovery and Integration (UDDI); and Web Services Description Language (WSDL). SOAP exchanges XML-based messages from one business application to another over the Internet. UDDI is a universal registry of resources, and WSDL standardizes how a service and its provider are described.

IBM joins industry heavyweights such as Microsoft, Sun and Oracle, in the Web services arena.

Users have high hopes for the iniative.

"[Web services] sparked my interest" because they would allow documents shared with trading partners to be changed automatically, says Dave Kulakowski, application development manager at Honeywell Aerospace Division. "But how many companies are in a position to use it? It's a great technology, but the rest of the industry needs to embrace [Web services]," he says.

Kulakowski says Honeywell would use IBM Web services within the company until the technology standards become stabilized and more companies implement some form of Web services.

Besides Honeywell, companies including Galileo International, Hewitt Associates, Duck Head Apparel, CareTouch and Transacttools are looking into IBM's Web services and plan to implement them within a year.



Prasuna Dornadula, CareTouch CTO, questions how companies will react to Web services without a universal payment structure.

Sam Johnson, CEO of Transacttools, says trading partners trying to connect to each other's legacy systems could go through an XML interface, rather than connecting to individual systems such as equity, settlement and fixed income in the financial community. Transacttools, a financial services application service provider in New York, will roll out IBM Web services to customers including J.P. Morgan, Capital International and Instanet.

Tim Hilgenberg, CTO at human resources consulting firm Hewitt Associates, says Web services, in general, have the potential to prevent customers from being locked into one vendor. "Web services are like Switzerland," because they're nonproprietary, so "customers won't have these pocketed islands and have to create the connectivity to reach these islands, which costs a lot," he says.

While some of the potential benefits of Web services are clear, other issues are not. For example, paying for Web services is one aspect that has yet to be explained, users say.

"There's no universal licensing under Web services," says Prasuna Dornadula, CTO at CareTouch, a Concord, Calif., health service. Businesses won't know if they are getting the best deal or how contracts will be negotiated and payment collected.

The challenge is trying to get business partners to implement Web services, says Henry Greene, CIO at Duck Head Apparel, a Winder, Ga., manufacturer of casual sportswear for men. Duck Head's customers include J.C. Penney, Sears and McRae's.

"Customers drove us into [electronic data interchange] because they demanded it, and it's hard for a vendor to push the customer into what they want unless it's proprietary," Greene says. Even if the customers buy into Web services, "they have such gigantic infrastructures, it's like turning around a battleship."

IBM Web services: www4.ibm.com/software/solutions/Webservices/

Win 2000 fix squashes 550 bugs

BY JOHN FONTANA

REDMOND, WASH. — Microsoft last week released Service Pack 2 for Windows 2000, which addresses about 550 known bugs in the operating system and automatically upgrades its encryption to 128-bit.

The fixes focus on application compatibility, Active Directory, Internet Information Server (IIS), management and administration, networking, security and setup. The service pack does not include any new features for the operating system, which is in keeping with a promise that Microsoft made when it shipped Win 2000.

Service Pack 2 is for the Professional, Server and Advanced versions of Win 2000.

The service pack was due to ship several weeks ago, but a major security flaw discovered in IIS delayed the launch (www.nwfusion.com, DocFinder: 4347). The fix for that flaw is included in Service Pack 2.

Microsoft said in February 2000 that service packs for Win 2000 would ship every six months. The first service pack rolled off the line last July, but this second service pack has not followed that timetable.



Featuring fixes for some 550 bugs, Service Pack 2 for Windows 2000 is now available from Microsoft.

The service pack is not a required upgrade, according to Microsoft, but users who choose not to install it should at least install the patch for IIS (www.microsoft.com/technet/security/bulletin/MS01023.asp).

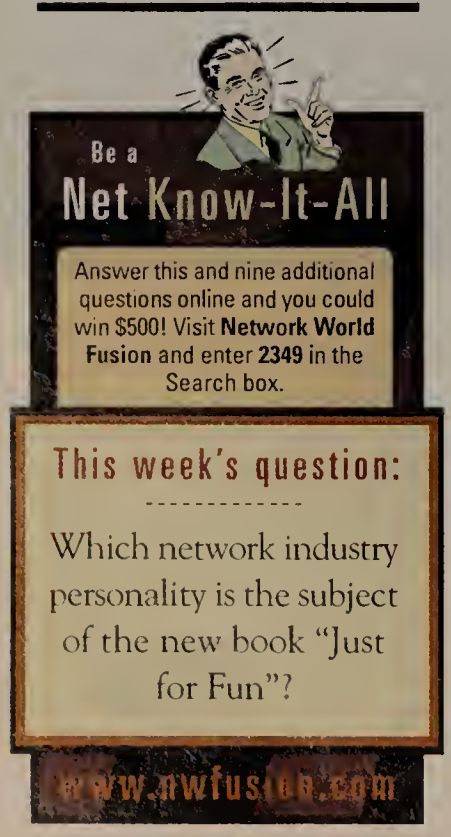
The service pack includes all the fixes that were included in Service Pack 1, so users who bypassed that pack need only install the new one in order to be up to date.

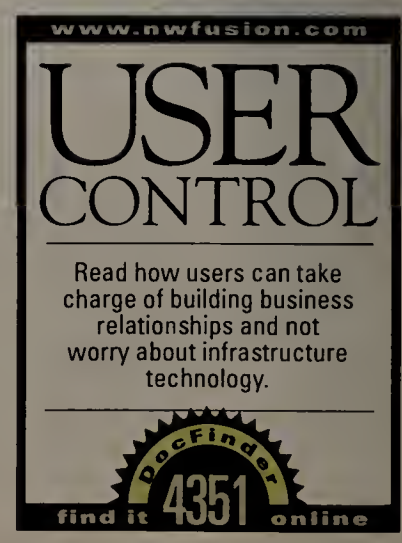
One of the biggest changes in the service pack is the addition of 128-bit encryption, which supports all the encryption services in Win 2000. Those include Kerberos, Encrypting File System, remote access server, remote procedure call, Secure Sockets Layer/Transport Layer Security, CryptoAPI, Terminal Services remote desktop protocol and IP Security.

IT administrators can choose to install Service Pack 2 over their network with the Network Installation version of the software. The network install is a 105M-byte executable file.

The service pack also is available in an Express Installation version, which only adds needed components to either desktops or servers.

Administrators can download Service Pack 2 from Microsoft's Web site (www.microsoft.com/windows2000/downloads/servicepacks/sp2/sp2lang.asp). A CD-ROM version of the service pack is available for $20. ◪





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Lucent plugs holes in its firewall/VPN line

BY TIM GREENE

MURRAY HILL, N.J. — Lucent is announcing five products that will give enterprise customers a way to plug potential security holes in telecommuter offices as well as large data centers.

While the company already offers a line of firewalls and firewall/VPN appliances and routers, these additions address areas Lucent did not previously protect. Specifically, the new Brick products include a small firewall appliance for telecommuter offices, a larger firewall for data centers and a combination VPN/ firewall appliance for branch offices. Also, the new gear includes two WAN routers for branch offices that incorporate firewall and VPN protection.

"I don't think they are missing anything," says Zeus Kerravala, a research director at The Yankee Group. Lucent's family of customer site gear now rivals Cisco's for breadth, he says. And Lucent has an edge with its single VPN client, which works across its product line. Cisco gear uses three different clients and the company won't have its unified client ready before next year (www.nwfusion.com, Doc Finder:4350).

The new firewall devices are called Brick 20 and Brick 1000. Brick 20 is a 2M bit/sec firewall/VPN appliance that includes a three-port 10/100 Ethernet hub. It costs $1,500 and is available now. Brick 1000 is a full gigabit firewall, bringing Lucent into the small group of vendors that can protect gigabit connections to data centers and storage-area networks. Cisco, NetScreen and start-up Asita also have gigabit firewalls.

For branch offices, Lucent is introducing Access Point 300, joining the Access Point 450 and 1000 high-end VPN/firewall boxes. The Access Point 300 includes a WAN access router that comes in five models with different WAN interfaces, including ISDN, T-1, E-1, V.35 and a serial port. It sports a 5M bit/sec firewall and can perform Triple-DES encryption, also at 5M bit/sec. It can handle up to 500 simultaneous IP Security (IP-Sec) tunnels and supports Layer 2 tunneling protocol as well.

Access Point 300 will be available this summer for $4,000 to $6,000, depending on WAN interface.

For smaller offices, Lucent is announcing the SuperPipe



Lucent's Brick 20 firewall for telecommuters has a three-port 10/100 Ethernet hub.

170, a VPN/firewall with an asymmetric DSL (ADSL) WAN port and a 10/100 Ethernet LAN port. It performs Triple-DES encryption at 1M bit/sec and supports up to 150 IPSec tunnels. It costs $1,095.

The SuperPipe 175 handles voice and data and connects to a service provider network via a T-1, V.35 or ADSL port. It supports voice over IP based on the H.323 standard, and has four analog voice ports for connecting phones and fax machines. It costs $1,600 to $1,800, depending on WAN interface.

Lucent is promising to unite management of its disparate VPN/firewall products under its overarching Navis management platform by year-end. Management of its Springtide IP service switches, which can be used in conjunction with the customer gear to provide managed firewall and VPN services, also will be brought under the Navis umbrella.

Lucent: www.lucent.com

Corrections

The story, "Make way for new management tools" (May 7, page 10) should have listed Interloci's management service offering pricing as $200 per device per month for its second-tier network monitoring service.

The story "Zuma switches double as server appliance" (May 7, page 10) should have stated the backplane speed of the LightReef Z16 switch as 256G bit/sec.

In the story "EMC targets SAN scalability, availability," (May 14, page 10), the price of SRDF-DM should have been $8,000 per license.

Check Point aims to automate VPN expansions

Software makes it easier to grow VPNs and change network security policies.

BY TIM GREENE

REDWOOD CITY, CALIF. — Check Point Software this week will announce a way for users to insert additional security gateways in VPNs without having to manually reconfigure the existing gateways.

The company is adding a software feature called Automated VPN Deployment that frees network managers from a chore that grows enormously as a VPN grows. For example, adding a sixth gateway to a fully meshed, five-gateway VPN calls for configuring five new tunnels — which is typically no big deal. Adding 20 gateways to an 80-gateway network, however, calls for 2,290 new tunnels.

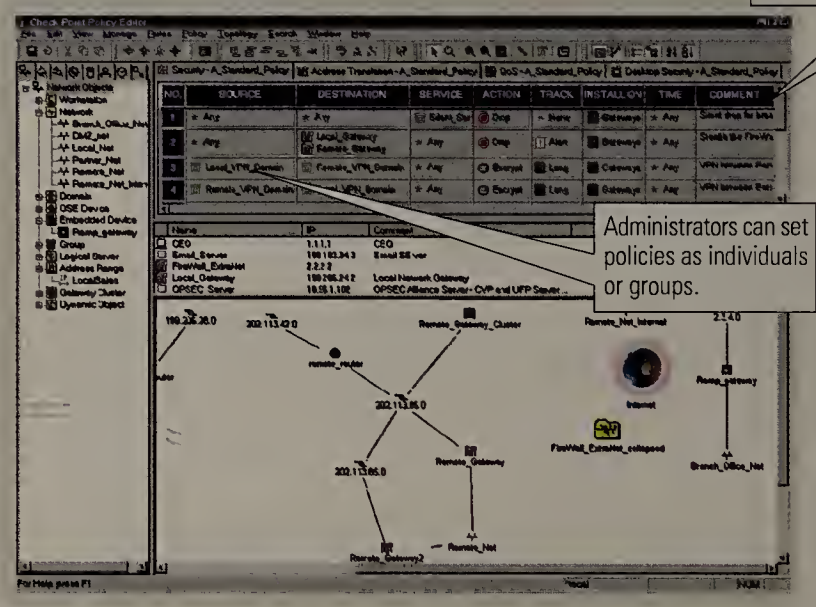
This automated deployment is done using a certificate authority that has been added to Check Point's VPN management server. The certificate authority automatically authenticates the new gateways so the existing ones know it's OK to create tunnels with them.

Check Point is also automating the process of distributing changes to VPN clients on remote PCs. Changes to security policies that govern how remote PCs must behave in a VPN can now be pushed to client devices when they log on.

Some similar features are supported by Check Point VPN competitors, including NetScreen and Cisco. Because Check Point also licenses its products to other vendors, some of these features could show up in Nokia and RapidStream equipment as well.

Hands-on policy control

Check Point's Policy Editor lets network professionals set custom security profiles.



These changes are part of a broad upgrade to its software — clients, gateways, firewalls — Check Point is calling Next Generation. The upgrades include the ability for users to monitor traffic between sites to determine effective throughput and network delay between VPN gateways. This feature can be used by firms to monitor traffic for problems and verify whether service providers are meeting service-level agreements.

Next Generation software also includes support for Differentiated Services, the scheme for tagging IP packets so they are treated with varying levels of priority.

The software also adds the ability to try alternative access to resources if the primary link fails. So, for example, a user at a branch office might try to reach a server at headquarters and the connection fails. The branch-office server would instead make a VPN connection to another branch office that has a dedicated link to headquarters. Check Point calls this Continuous Access VPN.

This feature is valuable but has some limitations, says Don Meyers, manager of research and development for Memphis investment firm Morgan Keegan & Company. Users have to weigh the importance of the traffic that travels over the alternate, dedicated route. These dedicated links are usually sized for a certain amount of traffic and could become congested if all VPN traffic to a downed site is allowed to cross them, he says.

These new features are available now as a free upgrade to customers with a software subscription contract.

Check Point: www.checkpoint.com

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Proponents take IPv6 off its pedestal

BY CAROLYN DUFFY MARSAN

OTTAWA — Proponents of IPv6, a controversial upgrade to the Internet's main communications protocol, are backpedaling on claims that the long-anticipated technology can solve the 'Net's security, quality-of-service and routing problems. Instead, they are touting one advantage of IPv6: that it can fix an anticipated shortage of addresses with the current IPv4.

The about-face was evident last week at the Global IPv6 Summit.

"My concern is about overhyping IPv6 in areas where it doesn't provide the level of solution that people are expecting," says John Klensin, chairman of the Internet Architecture Board and vice president for Internet architecture at AT&T. "Customers are being misled. But they're not frightened enough about what IPv6 does solve, which is address exhaustion."

IPv6 uses 128-bit addresses that can support a virtually unlimited number of computers and devices connected to the Internet. IPv4, on the other hand, uses 32-bit addresses and can support approximately four billion connections.

Most IPv4 addresses already have been assigned, primarily to ISPs, corporations and government agencies in the U.S. IPv6 promises to level the playing field and provide much-needed address space to service providers and corporations in Europe and Asia. Interest in IPv6 is strongest among wireless equipment and service providers, which predict demand for billions of new Internet addresses in the next few years.

Despite its promise, IPv6 has been slow to catch on, because it requires a costly and time-consuming upgrade to the Internet's backbone and edge systems. The Internet Engineering Task Force finalized IPv6 in 1998, but only a handful of IPv6-enabled products are shipping today from Nortel Networks, Sun, IBM and others.

For years, IPv6 developers have tried to encourage vendors, ISPs and corporations to upgrade to the technology by promising many ancillary features, including enhanced security, autoconfiguration of devices and elimination of network address translators.

Now even the staunchest IPv6 supporters admit that IPv4 has improved enough to eliminate the incentive to upgrade to IPv6 for these features. Instead, they say the bottom line for IPv6 deployment is going to be the worldwide demand for Internet addresses.

"We may never run out of [IPv4] address space," Klensin says, adding that the regional registries will increase their IPv4 address conservation efforts to prevent that from happening.

However, Klensin still recommends that ISPs and corporations upgrade to IPv6 in order to prevent an IPv4 address shortage caused by the rapid adoption of any new application that requires many addresses.

"If the wireless folks come to decide that IPv6 is not going to happen, that would be catastrophic for IPv4," Klensin says, pointing out that the world's wireless users could rapidly deplete the current IPv4 address supply.

> ***"My concern is about overhyping IPv6 in areas where it doesn't provide . . . a solution that people are expecting."***
>
> John Klensin, chairman
> Internet Architecture
> Board

The wireless industry is interested only in the addressing features of IPv6, not in its security, mobility, quality-of-service or other enhancements.

"The demand we see for IPv6 is primarily in Europe and Japan, and it's primarily related to address space," says Al Javed, CTO for wireless Internet at Nortel. The other features of IPv6 "are all nice things to have, but the value doesn't justify the cost of making the change."

Javed says wireless carriers are installing IPv4-based systems in Europe today and won't quickly upgrade to IPv6 without an economic incentive. "I've been around networking long enough to know that what's nice to have doesn't happen," he adds.

For example, the next-generation European wireless initiative known as the Third Generation Partnership Project (3GPP) was the first group to mandate IPv6, in May 2000. However, it now appears that 3GPP will deploy IPv6 on just a small portion of its systems and only for addressing.

"3GPP has selected IPv6; most people know that," says Thomas Narten, a co-director of the IETF's Internet area and an engineer with IBM. "But we're not clear that we've come to agreement on which of the IPv6 protocols 3GPP is going to use."

3GPP will use IPv6 only for multimedia applications, retaining circuit-switched networks for voice traffic and IPv4-based radio networks for data traffic. End users of 3GPP systems will get IPv6 addresses, but their applications will traverse an IPv4 backbone. 3GPP will not use IP Security, the security model built into IPv6, nor will it use Mobile IPv6 for roaming.

Most significantly, 3GPP will not adopt IPv6's much-touted end-to-end architecture, which was designed to simplify the Internet's backbone for improved scalability. Instead, 3GPP will use gateways and other intermediary devices that are similar to the IPv4 network address translators that IPv6 aimed to eliminate.

"It's a little depressing," admits Jim Bound, chairman of the IPv6 Forum's technical directorate and an IPv6 developer at Compaq. Bound says that despite all the marketing hype, 3GPP is taking "baby steps" toward IPv6.

There's so much confusion about exactly which aspects of IPv6 the 3GPP project will use that the IETF is hosting a special meeting in Seattle later this month to try to clarify the situation.

"The IETF is trying to work more closely with 3GPP to understand what they need," Narten says.

The 3GPP project is "still in the definition stage," says Latif Ladid, IPv6 Forum president and chairman of the European Commission's task force on IPv6. Ladid says 3GPP will finish defining its technical architecture by year-end, with trials planned for 2002 and deployment anticipated in 2003.

Limited support of IPv6 within the 3GPP initiative is prompting vendors to ship IPv6-compliant products. Cisco will ship IPv6 support in its IOS software this month, and Nortel plans to provide IPv6-enabled hardware in its next-generation routers. But vendors such as Nortel will support only the features of IPv6 that 3GPP requires.

"We are fully committed to delivering IPv6 for 3GPP, but we will be doing the mandatory features of IPv6 first," Javed says.

"What we would like to see are better standards for coexistence between IPv4 and IPv6," he adds. ◪

IPv6 plans

Despite some industry backpedaling on IPv6, some vendors have plans to support the protocol.

Cisco: Will ship IPv6 support in its IOS software this month. Cisco's high-end routers, the Catalyst 6500, 7600 OSR and 12000 series GSR, will get IPv6 support in hardware within one year.

Compaq: Has July ship date for Version 5.6 of its Tru64 Unix operating system featuring IPv6-enabled e-mail clients, servers and filters. Due soon is IPv6 support in Compaq's Secure Web Server, which is based on Apache open source software.

Nortel Networks: Will feature native IPv6 support in hardware for its next-generation routing products Shasta, Passport and OPTera Packet Core.

IBM: Is developing IPv6 support for its S/390 Enterprise Server systems.

Microsoft: Plans to ship IPv6 support in a version of Windows due out in 2002.

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Briefs

Linux vendor **Caldera** has announced plans to buy **Acrylis Technology**, maker of the WhatifLinux package, an Internet-delivered software management tool. Caldera will fold Acrylis' technology into Volution, its own Linux desktop management and software updates package. Terms of the agreement were not disclosed.

Caldera: www.caldera.com

Novell announced last week that its Groupwise messaging and collaboration software will now run on any handheld device running Palm OS. Novell also announced that **Pumatech** and **Syclo** will provide wired or wireless synchronization for GroupWise e-mail, calendar items and tasks between a user's desktop computer and Palm device. Novell will provide Palm compatibility through a technology called Web clipping that lets users directly access their GroupWise accounts via a wireless connection. The Palm OS Web clipping application is free to GroupWise 6 customers and can be downloaded from www.novell.com/download beginning in June.

EMC and **Nortel Networks** last week said they are working together to create optically networked storage systems for WANs, metropolitan-area and campus networks. EMC will provide Symmetrix storage systems with its Connectrix family of fiber switches to link the storage arrays. EMC will also offer its Symmetrix Remote Data Facility software to coordinate, manage and secure multilocation storage on the network. Nortel will link locations with its OPTera Metro 5200 dense wave division multiplexing platform.

EMC: www.emc.com; Nortel: www.nortel.com

Nortel revamps enterprise VoIP package

BY PHIL HOCHMUTH

Nortel Networks may be a latecomer to the IP PBX market, but the company could be getting in the game quickly with new technology designed to help traditional PBX customers painlessly migrate to IP.

The company's Succession Communication Server (SCS) 1000 is Nortel's first server-based IP PBX system aimed at large enterprise deployments. Previously, Nortel's main answer to packet telephony for these customers was a gateway that let Meridian customers use IP phones.

Nortel says its new system could ease the transition to voice over IP for the company's existing Meridian PBX. The SCS 1000's software and management features have been modeled after technology in the Meridian line, which supports more than 43 million phone users in U.S. firms.

Nortel has morphed its Meridian PBX software to run on an IP server platform that runs on the real-time operating system VxWorks. Nortel says this platform provides better reliability than IP PBXs based on Windows NT server and made by Cisco and Siemens. The SCS 1000 will compete with Avaya's IP600 Communication Server, Cisco's Media Convergence Server, Alcatel's OmniPCX 4400 and Siemens' HiPath 5000.

While Nortel's new system will have some things in common with the Meridian, the firm says the SCS 1000 also includes advances, such as Web-based tools, that will make it easier to manage and configure. Meridian systems often required a visit from a telecom integrator when a phone system had to be reconfigured.

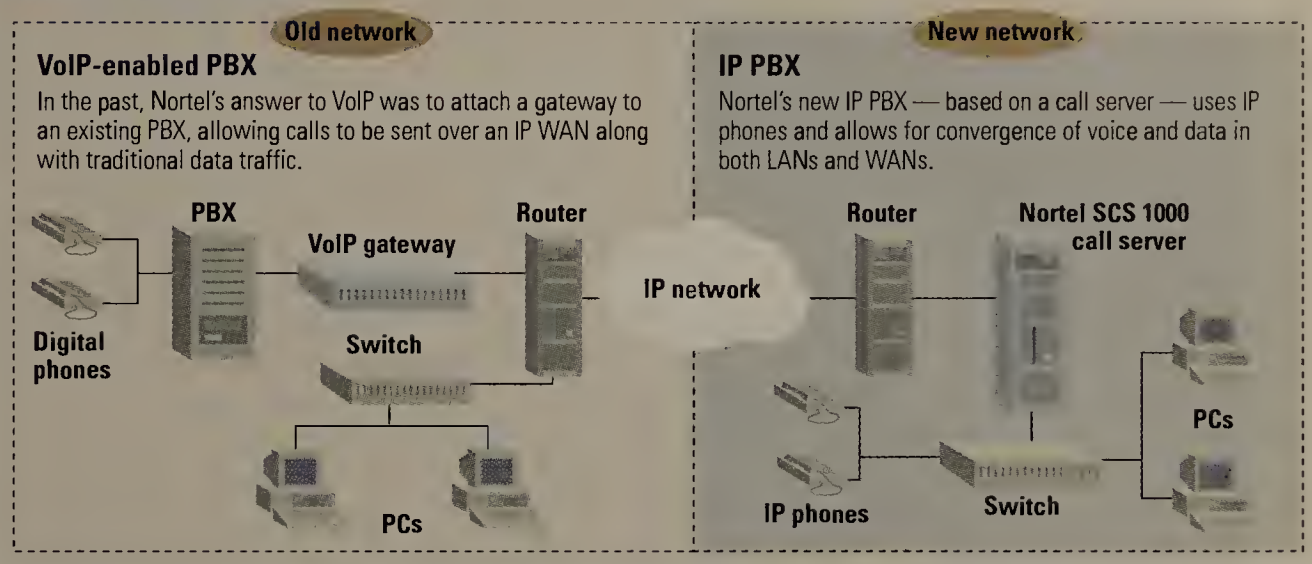
The Oregon Department of Transportation, which has a network of 11 Meridian 1 PBXs, has dabbled with IP in its voice environment by extending Meridian access to branch offices via Nortel Remote Office 9150 devices and T-1 connections into the Internet. While the technology has worked well, this essentially only gives these offices access to the old circuit-switched PBX systems. Vance Snook, telecommunications coordinator for the department, has reservations about going any further.

"I don't know if I would really be confident in deploying a full-blown IP PBX," he says. "Maybe because I've been a hard-wired voice guy for so long."

The SCS 1000 will support Nortel's i2004 IP phones and Nortel's new i2050 softphones, which run on a Windows desktop outfitted with speakers and a microphone. The IP PBX will be available in July and start at $700 per line.

Nortel: www.nortel.com

Nortel's VoIP evolution



EDS and Dell unite to help manage desktops

BY DENI CONNOR

ROUND ROCK, TEXAS — Dell and EDS last week announced they are joining forces with a new "seat management" offering designed to help firms avoid managing desktops by the seats of their pants.

Customers buying Dell OptiPlex PCs, Latitude notebooks and Precision workstations can now sign on for the Dell Seat Management Service, which entails planning, procurement, integration, asset management, software distribution, help desk, and hardware and software maintenance services.

The service is designed for companies with 1,000 to 10,000 Dell computer users. Dell says demand for such a service has increased in light of IT staffers getting harder to come by.

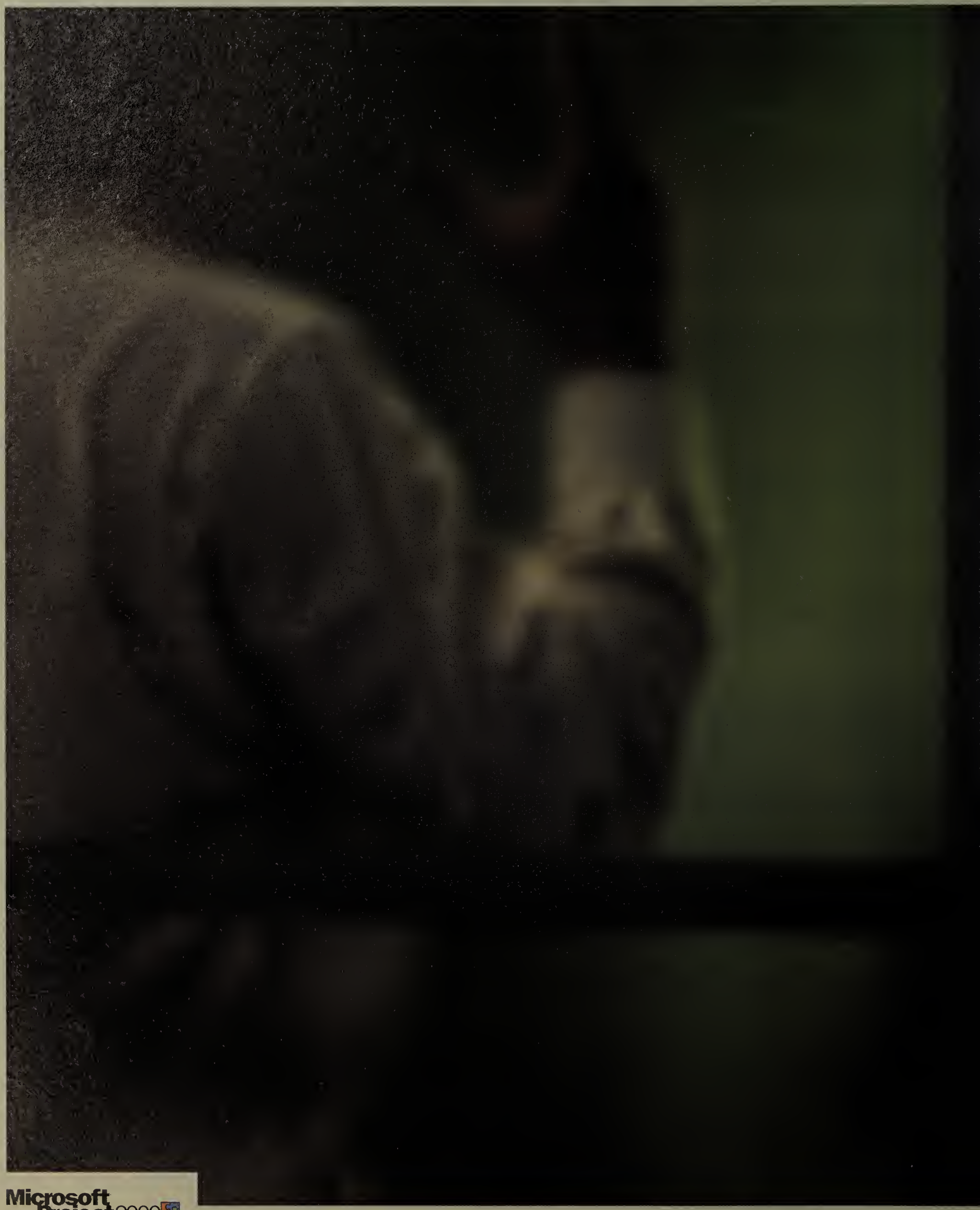
The service will give end users and network administrators access to a toll-free number or a customized Web portal to receive help configuring new printer queues; installing Microsoft Office applications; adding, moving or configuring new workstations; fixing troublesome workstations; and dispatching on-site service, among other things. If the issue cannot be solved remotely, a Dell or EDS technician will be dispatched to the customer site.

Outsourced desktop management is attracting corporate customers because they like the idea of charges being tied to the number of desktops being managed, says Rob Enderle, research fellow for Giga Information Group. Among other things, this practice helps companies charge back departments for IS services, he says. It also lets companies redeploy IS staff to more strategic initiatives, he adds.

Gartner estimates the total cost per ownership of a desktop PC can be $7,500 per year, with 88% of that cost to cover operations, management and support.

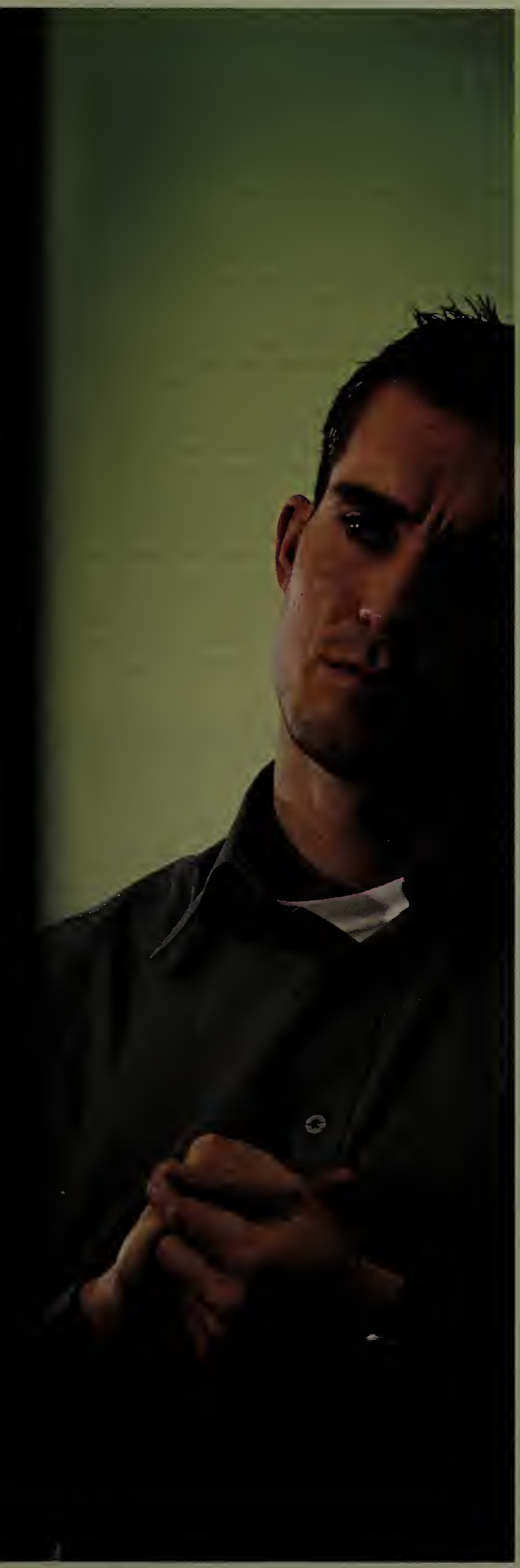
The Dell Seat Management Service costs $70 to $90 per user per month.

Dell: www.dell.com



Microsoft Project 2000
Microsoft Office Application

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Microsoft

Start-up gear zooms in on streaming video

Vantum's all-in-one video appliances serve up live, recorded content using any standards-based video equipment.

BY JASON MESERVE

BOULDER, COLO. — Start-up Vantum is looking to take some of the complexity out of streaming media with new cameras that can encode video for live and on-demand viewing.

The devices look like bank security cameras, but come with a built-in operating system, hard drive, 10/100 Ethernet card and audio inputs. The devices capture video and encode it into the MPEG format, then stream it out or record it for later play. These tasks traditionally were handled by separate cameras and PCs.

Both live and on-demand video served from a Vantum device can be viewed with any standards-based video player, including Cisco IPTV and Apple QuickTime. Vantum also offers a plug-in for viewing video directly in a Web page.

"We want to make this device as easy to use for the corporate users as an auto-focus projector," says Howdy Pierce, Vantum CEO. "All viewing and configuration functions can be accomplished via a Web browser."

A new study from HTRC Group reports that the use of streaming media applications is on the rise, with 35% of those interviewed saying they use such applications now and 42% saying they plan to use them by next year.



Vantum's new line of video devices can capture, record and stream MPEG video.

Corporate training is among the more popular uses of the technology.

"Most companies do not have video production and encoding facilities, so they usually have to outsource the job," says Greg Howard, principal analyst at HTRC. "Instead, the company could sit an instructor in front of one of these cameras and stream the lesson live while storing it for future on-demand viewing."

Pierce says the "secret sauce" of Vantum's products is a built-in programming language based on ECMAScript (the standardized version of JavaScript). The development environment lets administrators build applications for the camera with predefined functions such as "on motion detection, begin recording."

Security is one of the obvious uses of the devices, which can serve 30 frame/sec of live video while recording a 1 frame/sec video for archive purposes. Pierce also sees a use for ad hoc corporate communications.

"A person can go into a conference room and as soon as the lights come on, the camera records everything," he says. "So there's automatically a record of every meeting for people to review later."

Vantum is a 23-person firm that spun out of DiviCom with venture funding from Red Rock. Michael Perkins, founder and vice president of engineering at Vantum, was on the committee that developed MPEG 2. He and Pierce researched video algorithms for DiviCom.

Vantum's four devices — the C1, C1d, M1, and M1d — will be available in about a month. The C series includes a built-in camera, with the C1d having onboard storage. The M series is for customers with existing analog cameras. Like the C1d, the M1d contains an onboard hard drive. Pricing ranges from $1,300 to $2,000.

Vantum: www.vantum.com

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Wired Windows . Dave Kearns

VACATION AND E-MAIL JUST DON'T MIX

I wrote most of this while on vacation, as my wife and I cruised from Seattle to Alaska three weeks ago. I talked about the shrinking world and how you could be in touch through e-mail and Web surfing over a satellite link no matter where you were. I wrote that and used the cruise ship's Internet café to send the column to my editor for the May 7 issue of *Network World*.

Alert readers will now be saying, "But there was no Wired Windows column two weeks ago!"

I'm sure it's possible to "stay in touch" via satellite, even using a shared, terminal-server-like session (all I could actually see was a keyboard, monitor and a customized browser). After all, many of you connect your enterprise networks via satellite. Too bad the combination of the ship's Internet café, the satellite link, a choppy sea, a Web-based e-mail client that wanted to (but couldn't) put a cookie on my terminal and —perhaps — my less-than-dedicated attention to all the details (I was on vacation, for heaven's sake!) united to make the copy of that column my hard-working editor received virtually unreadable.

The various problems mentioned above caused my e-mail client to ask for username and password every time I clicked a button or a link (which you do frequently when composing a message with an attachment). Reading mail became: log on, click read, log on, click in-box, log on, click first message, log on, read message (more spam), log on, delete message, log on, choose in-box, etc. It took about 10 minutes to log on to the terminal, get to my mail server and read and delete the first message (which I knew was spam from the first line, so I didn't linger over it). At that point, there were 164 messages still waiting to be read.

I threw up my hands, said a silent prayer that all would be well and stopped trying to read mail for the week. So it wasn't until I got back to the office (long after that issue of *Network World* had been mailed) that I discovered the problem — after wading through the 600 or so messages — waiting.

It is a shrinking world. You can be in touch from everywhere. But mixing business and pleasure still isn't easy.

Kearns, a former network administrator, is a freelance writer and consultant in Austin, Texas. He can be reached at wired@vquill.com.

Tip of The Week



If you go cruising and use the Internet café on board, try to avoid the "built-in" e-mail. Instead, get the URL for your Web-based e-mail client/front end. You'll save considerable money that way. Provided, of course, that the e-mail gods are shining on you.

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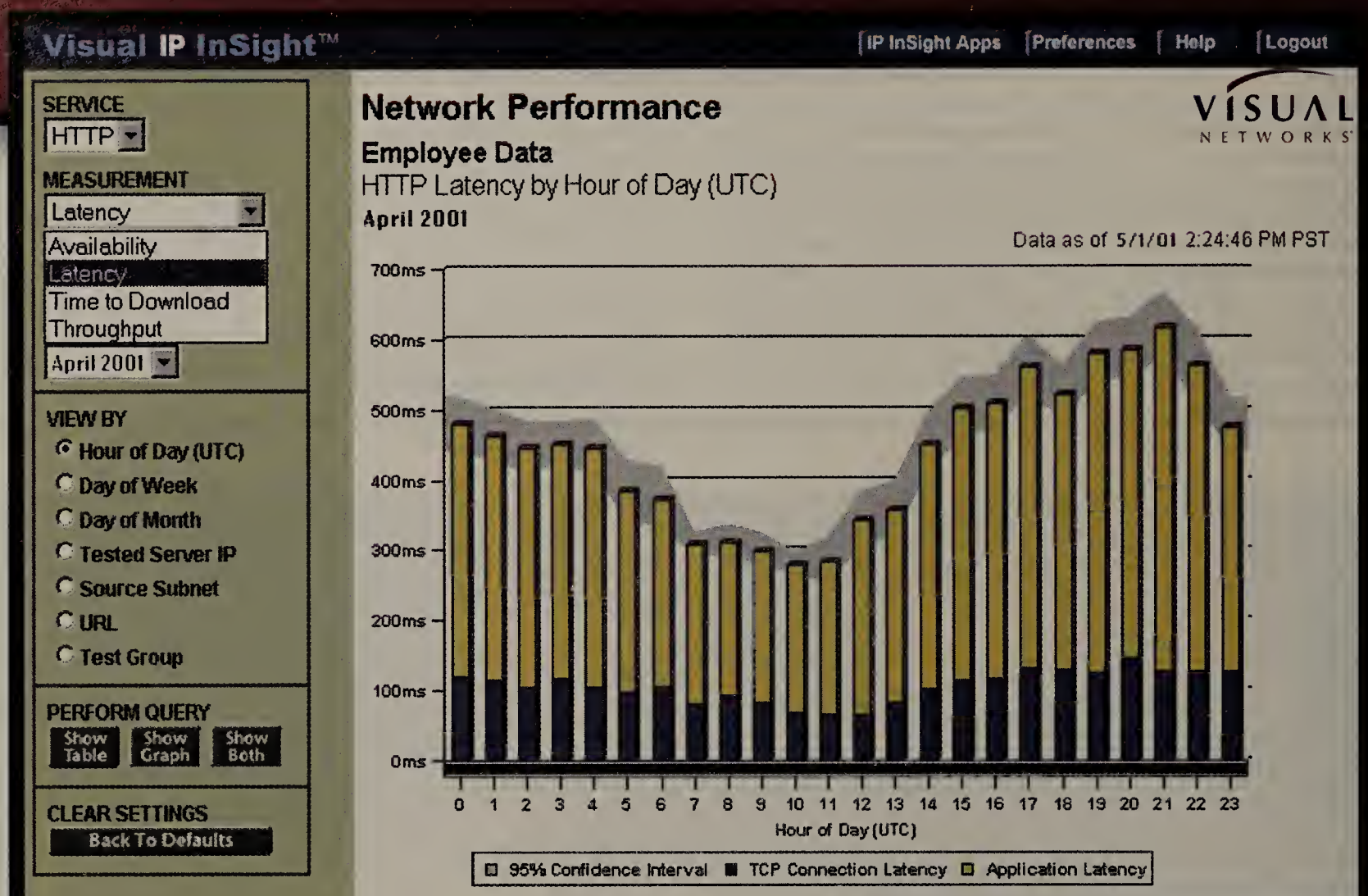
and document management software, you can maximize your investment in these systems*. The cost and hassle of overnight delivery are finally over. At Canon, we're giving people the know-how to make paper documents work in an internet world.



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Briefs

Managed hosting firm **NaviSite** this week is unveiling services it says will give customers access to server capacity on demand, as well as 100% availability on their front-end infrastructures. The Instant Availability Service and Instant Capacity Service are based on a new autoprovisioning capability being added to expert-Os, the underlying management and operational platform NaviSite uses for its managed hosting services. The services, expected to be available in July, are similar to technology used by infrastructure provider Loudcloud.

NaviSite: www.navisite.com

Sprint earlier this month said it would deliver OC-192 connections across its IP backbone and expand its Internet VPN portfolio using products from Cisco. Sprint will use Cisco 12400 series routers to deliver OC-192 connections in the U.S. and across the Atlantic Ocean. The maximum speed Sprint currently supports over its backbone is OC-48. Also, Sprint will offer corporate customers integrated firewall and VPN services using Cisco's 1700, 2600, 3600, 7200 and PIX series routers.

Savvis Communications has launched an enhancement to its Internet access service called Intelligent Accelerator. The technology, which Savvis has deployed in its network operation center in St. Louis and throughout its points of presence, can detect the geographic location of Web servers that customers access. Once the system determines the location of the server, it automatically chooses the closest and least congested point on the service provider's network to route the server traffic. The enhancement costs 20% more than the service provider's standard Internet access fees.

Savvis: www.savvis.com

C&W finds a bargain in Digital Island

BY DENISE PAPPALARDO

Cable & Wireless appears to have filled a glaring need with last week's bargain-basement purchase of Web hosting service provider Digital Island.

Anxious to expand its U.S. presence, Cable & Wireless for several months has been on the prowl to acquire a Web hosting provider at a cost commensurate with new market realities. The price tag on Digital Island was $340 million.

The initial plan is for Cable & Wireless and Digital Island sales teams to sell both companies' Web hosting services. Cable & Wireless customers will have access to Digital Island's high-end Web hosting and content distribution services, while Digital Island customers will have better access to high-speed network services.

Cable & Wireless has 22 data centers worldwide, but only two are in the U.S. The firm has stressed its desire to expand its managed Web and application hosting business, and it needs additional facilities in the U.S. to make that happen.

Digital Island brings 10 data centers, with U.S. facilities in New York, Boston, San Jose, Los Angeles and Honolulu. The acquisition also brings large corporate customers to Cable & Wireless.

Digital Island says 70% of its service revenue come from large corporate users. Cable & Wireless has a few marquee customers, such as Barnes & Noble, but not nearly as many as Digital Island, says Melanie Posey, senior analyst at market research firm IDC.

This is a bargain buy for Cable & Wireless, Posey says. The purchase price of $340 million equals $3.40 per share. Digital Island's stock traded as high as $148 per share in December 1999. However, in the past three months, the company's stock hasn't traded much above $2.

"Turbulent times create huge opportunities," said Cable & Wireless CEO Graham Wallace in an interview with *Network World* last month. "Weaker players suffer, which ultimately is good for our competitive position. This opens the door to some interesting opportunities in terms of purchases."

While many companies are cash poor these days, Cable & Wireless has at least $3 billion in the bank. The current economy is letting the service provider get the most for its money.

"With Digital Island's debt, [Cable & Wireless] is paying about $400 million for the company. That's bus fare for Cable & Wireless," Posey says. "Digital Island wasn't going to make it on its own, so this is a good exit strategy for them."

Digital Island's headquarters in San Francisco will be maintained, and its management team is expected to remain on board, says Marc Lefar, executive vice president of marketing at Cable & Wireless.

Lefar says Cable & Wireless has not ruled out other acquisitions in the U.S., U.K. or Japan.

Reaching around the globe

Cable & Wireless plans to beef up its Web hosting services and U.S. data center facilities through its acquisition of Digital Island for $340 million. Here are some facts about Digital Island:

Location:	San Francisco
Founded:	1995
2000 revenue:	$59.1 million (fiscal year-end 9/00)
Data centers:	New York, Boston, San Jose, Los Angeles, Honolulu, Hong Kong, London, Frankfurt and Tokyo
Customers:	E*Trade, UBS Warburg, Sony and Microsoft
Employees:	850

Vendors say they'll speak new Web content language

BY JENNIFER MEARS

NEW YORK — A proposed standard language designed to ease the delivery of personalized dynamic content over the Web is getting support from software and content delivery network providers.

CDN provider Akamai Technologies and software maker Oracle unveiled Edge Side Includes (ESI) last month, but at the time no other vendors came out in support of the effort. Last week, ATG, BEA Systems, Circadence, Digital Island, IBM, Interwoven and Vignette announced their involvement as co-authors of the markup language. In addition, Fort Point Partners, KPE, Macromedia, Mirror Image, Open Market and SilverStream have endorsed the proposal.

The support of a cross-section of industry leaders gives ESI momentum as it seeks adoption as an open standard, observers say. The companies plan to submit ESI to a standards body by the end of the month, but they won't say which one.

ESI is based on HTML-like tags that can be inserted into applications to identify fragments of Web pages that can be assembled and updated at the network's edge. The markup language is designed to accelerate the delivery of dynamic content and cut down on infrastructure demands.

Joe Seibert, CIO at Viacom, an Akamai customer, says if vendors incorporate ESI into their products, users will be able to develop flexible applications more quickly and more economically.

"As we tie together all of the different technologies that we use to move content around, it will be a lot easier to develop applications to move that content through application servers, and distribution networks and content management systems," he says.

www.nwfusion.com

OPEN STANDARD SUPPORT

Read about how industry leaders are backing a new content delivery language called ESI.

DocFinder 4329

find it online



Eye on the carriers . Johna Till Johnson

THE ART OF CARRIER NEGOTIATIONS

When it comes to service quality, most carriers are failing.

"Almost without exception, carriers are not living up to their commitments," says a member of the Wall Street Technology Association, which includes telecom managers from leading financial institutions.

We're not talking rocket science here (or even Multi-protocol Label Switching-enabled VPNs). Carriers are having trouble with the basics: getting circuits provisioned on time; providing business-relevant definitions of uptime; maintaining consistent support from the service provider account team; and, of course, delivering accurate and timely bills.

What's a telecom manager to do? While there's no easy answer, here are some tried-and-true processes that will help ensure your company gets the best possible services.

Start by recognizing that carrier contract management isn't something that happens just at contract-renewal time. Getting top-tier service requires users to plan for every stage of the service-acquisition life cycle.

That means thoroughly understanding your business requirements and the applications that will be running across the WAN. For example, an interactive sales-automation application might require extremely low latencies to function effectively (particularly if it's based on an antiquated two-tier architecture). That tells you something about the service-level agreement (SLA) requirements you'll need.

Next, carefully research prospective providers. Both traditional and "New Age" providers are undergoing tremendous upheaval as they roll out new technologies and revamp their business models. Be sure they're fully funded and staffed with plenty of technical expertise.

And make a point of understanding dependencies: If that whiz-bang, new Lambda service requires trenching fiber and deploying a bleeding-edge metropolitan-area switch, you probably won't get it within the next 30 days, no matter what the provider says.

Then pull together your team. Successfully turning up services requires three skill sets: negotiation savvy, technical expertise and project management. Many companies have top-tier negotiators in their purchasing departments — get them engaged early, even if these individuals have little networking expertise. Telecom managers can often learn from the folks who've spent decades driving discounts out of mainframe manufacturers and software behemoths. Technical expertise is critical for validating proposed solutions and crafting effective SLAs. And lastly, solid project management helps keep the service providers on track regarding deadlines.

Now you're ready for the most important part: defining the successful project outcome. What are your goals in terms of price, service quality and provisioning time frames? What are your must-haves, and where can you be flexible? Knowing your priorities increases your chances of crafting a successful contract.

What should that contract look like? Stay tuned. In my June 4 column, I'll explore the ins and outs of effective contract structuring.

Till Johnson is senior vice president and CTO for Greenwich Technology Partners. She can be reached at johna@greenwichtech.com.



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Briefs

Terawave Communications introduced a new Passive Optical Networking product designed to extend the reach of DSL access multiplexers.

The new model, TW-150 RT, gives service providers the ability to locate DSLAMs closer to the subscribers' premises via fiber-optic cabling as a flexible broadband "extension cord." The TW-150 is hardened to withstand temperatures ranging from -40 degrees to 75 degrees Celsius. The unit was developed using the networking standards and protocols established by the Full Service Access Network consortium.

The TW-150 will be available in December. Pricing for the product was not released.

Terawave: www.terawave.com.

Quantum Bridge Communications announced two new members of the company's Access Alliance partnership program.

AirFiber and **LightPointe**, two manufacturers of carrier-class, free-space optics systems, are now part of the alliance following a series of interoperability tests and network management integration between their products and Quantum Bridge's Optical Access System.

Quantum Bridge: www.quantumbridge.com

ADVA Optical Networking announced a contract with **Telindus** and **XchangePoint** to deploy ADVA's Fiber Service Platform 3000 in metropolitan-area networks.

The 32-channel dense wavelength division multiplexer will be installed by XchangePoint, a new U.K. service provider, to connect dark fiber rings across sites in the metropolitan area and to interconnect between high-volume peering customers.

ADVA: www.advaoptical.com

Astral Point unveils SONET box

ON 7000 combines add/drop muxing, cross-connect and DWDM.

BY TERRI GIMPELSON

Astral Point last week topped off the high end of its optical product offerings with a system designed to let service providers get more bang for the buck from their existing SONET infrastructures.

The ON 7000 is a modular system that integrates SONET add/drop multiplexing (ADM), dense wave division multiplexing (DWDM) and digital cross-connect systems (DCS) capabilities in a single telephone company bay. The system, targeted at incumbent local exchange carriers (ILEC), is one-sixth the size of current generation products and can save carriers up to 60% on their capital equipment expenditures, Astral Point claims.

The ON 7000 aggregates up to 576 DS-3, 864 OC-3 and up to 36 OC-192 interfaces per rack. Astral Point says the system also grooms traffic to STS-1 and VT 1.5 granularity, and can support four terabits of bandwidth per bay and 32 wavelengths of DWDM.

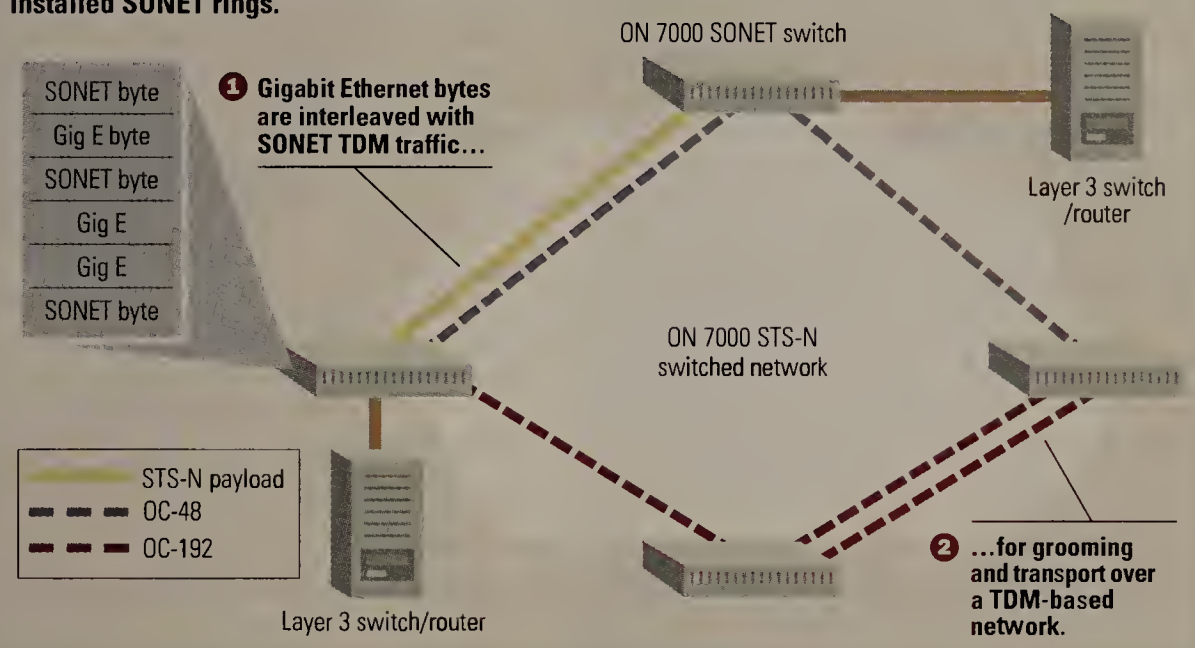
Conversely, Astral Point's ON 5000, the previous high-end offering, has a switch fabric that scales from 10G to 20G bit/sec, and supports up to four OC-48c switch trunks and up to 24 wavelengths. The ON 5000 is targeted predominantly at competitive local exchange carriers (CLEC).

Astral Point Senior Product Manager Chris Janson says the ON 7000 is designed to use existing SONET infra-

See **Astral Point**, page 28

Everything's better with ol' SONET on it

ON 7000 treats Gigabit and 10G Ethernet as service interfaces to be transported over widely installed SONET rings.



Equipe unveils ATM switch element manager

BY JIM DUFFY

ACTON, MASS. — Start-up ATM switch maker Equipe Communications believes it has new reason to consider its products as alternatives to incumbent vendors' offerings for IP service migration.

Equipe's EvailNet Manager element management system raises the bar in terms of operational support system (OSS) integration, scalability and reliability, the company claims. That's a tall order, especially when vendors don't usually play up the management capabilities of their switches. Equipe plays up its manager because it feels strongly that it has a winner — and a competitive differentiator.

"Usually, management is not going to be a high priority on [a service provider's] feature list, but it is becoming a more prominent problem," says Nancy Ruzicka, an analyst with The Yankee Group. "All things being equal, this could tip the [purchase decision] in Equipe's favor."

Equipe has filed for 30 patents on EvailNet Manager, which is above and beyond the usual call of duty for hardware vendors to protect the intellectual property of a management application.

But the company believes EvailNet Manager is full of benefits, such as the XML interface for integration with legacy OSSes. Vendors usually provide a Common Object Request Broker Architecture interface with their management software for OSS integration, but Equipe officials say CORBA is too unwieldy for rapid integration.

Another feather for EvailNet Manager, Equipe claims, is that each E3200 switch it manages is, in essence, a distributed management server. Each switch implements its own configuration database that EvailNet Manager accesses to map the network, manage the node and provision services.

See **Equipe**, page 28

www.nwfusion.com
THE EVAIL ADVANTAGE
Read about how Equipe's new software intends to help service providers and carriers avoid downtime from software-based network outages.
DocFinder 4330
find it online

Comgates IP-voice gear seeks the best QoS path

AXon system plots back-up routes across multicarrier network links.

BY TIM GREENE

HERZLIYA, ISRAEL — Comgates will demonstrate at SuperComm next month a softswitch system for IP service providers that improves the quality of service across multiple carrier networks by switching the path of traffic to the least congested route available.

This system, called aXon, can be set up by a single carrier to improve the QoS its customers receive even if other service providers don't share a single QoS scheme, according to Benjamin Bar-Ness, Comgates' vice president of business development.

Rather than wait for all carriers to install interoperable technology that can support QoS — such as Differentiated Services (Diff-Serv) or Multiprotocol Label Switching (MPLS) — a single service provider can improve performance for its customers on its own, Bar-Ness says.

AXon relies on a series of probes to monitor traffic at key points across networks and a policy server called Q-Brain to determine what is the best path for traffic to take. These two elements act in concert with Comgates' CSSW4000 Softswitch.

AXon operates at the session level (Level 5 of the ISO model) rather than Layer 3 or 4, where other QoS schemes such as Diff-Serv operate. For instance, Unisphere makes the ERX edge routing switch that works in conjunction with its SRX softswitch and supports Diff-Serv and MPLS to deliver differentiated service quality.

The advantage of operating at the session level is that service providers can set up aXon without requiring multiple service providers to agree on QoS technology and equipment, he says.

AXon offers a temporary fix to QoS that will be likely be addressed more comprehensively by other technologies, says Tom Valovic, program director for IP telephony research at market research firm IDC.

"Softswitches are still in a proof-of-concept stage, and [aXon] is more of a valued-add. We're not at the value-add stage yet, so they may be a little early with this," Valovic says.

When a call is placed across a network based on aXon, CSSW4000 softswitches at each end of the connection establish a path for the traffic to travel. This decision is aided by data gathered by probes called cNAPS that are placed at access points to the service provider's network and at peering points between providers' networks. By pinging the networks, Q-Brain finds the next-best route and holds it ready in case the primary path fails or becomes too congested to support voice.

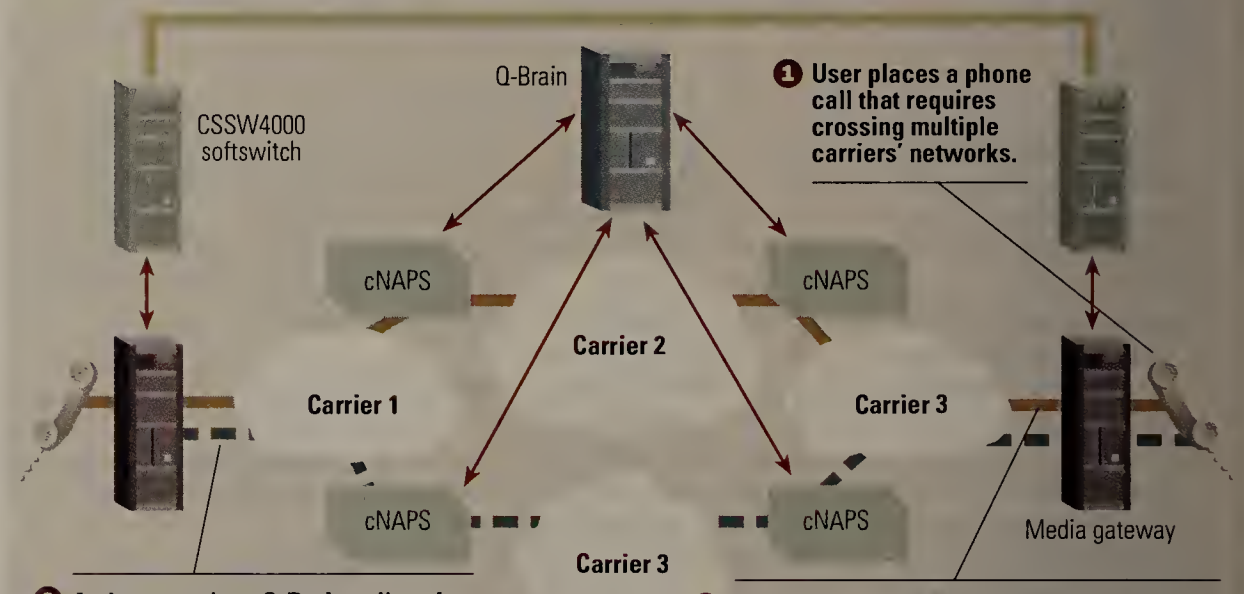
When jitter or latency thresholds are reached, Q-Brain triggers switching to the secondary path. The switchover takes place in less than 250 milliseconds, creating a discernible break in the conversation. However, if these switchovers take place less than once or twice per minute, they will not disturb the parties who are talking, Bar-Ness says.

Comgates licenses its softswitch for $15 to $50 per phone connection, depending on how many ports are licensed. Adding the aXon QoS system is an additional 50% on top of that licensing fee.

Comgates: www.comgates.com

Comgates boosts service quality with aXon system

Comgates' CSSW4000 softswitches shift calls from one path to another during a single session to protect the quality of the call from congestion within other service providers' networks.



Astral Point,
continued from page 27

structures because ILECs receive 98% of their revenue from SONET-based services.

"There was never really a reality to voice over IP or to Ethernet taking over. It was only a gee-whiz technology," Janson says. "Carriers never turned away from SONET, and that was part of our basis for development. We want to show how it's possible to evolve your SONET network at a lower cost instead of starting over. This doesn't mean Ethernet is dead, but I don't think we'll see it as a native transport. Ethernet will be delivered over SONET."

Analysts concur.

"There are over 100,000 SONET rings in the U.S. and in Canada," says Michael Howard, principal analyst and co-founder of Infonetics Research. "Most of these ILECs are going to have SONET rings around for a while, and they may have to develop Ethernet services in a part of their networks. But most will run that service over their existing SONET rings rather than develop an entirely new network. The ON 7000 allows a carrier to offer new services like Ethernet while keeping their existing investment."

Janson also notes that the ON 7000 was designed to accommodate changing spending patterns among service providers.

"In the '80s, ILECs spent money on equipment, but now that money is being spent in operations," he says. "We had to show them a means to reduce their equipment expenditures."

Some of the savings will come from the ON 7000's ability to groom traffic locally, rather than backhauling it to a central office, Howard says.

"This significantly simplifies operations and improves efficiency in traffic flow," Howard says.

Astral Point can also groom down to the VT 1.5 level while competitive offerings cannot, analysts say. The only downside to the ON 7000 is that there may be too much functionality in one box, Howard says.

This level of integration may keep service providers from considering separate, "best-of-breed" products for ADM, DWDM and DCS, observers note.

ILECs also have a long sales cycle compared with CLECs, Astral Point's traditional customer base. So it may be some time before the ON 7000 emerges in networks and Astral Point can gain traction from it, notes market research firm Current Analysis.

Nonetheless, "Astral Point needed to expand its product focus past the CLEC-aimed ON 5000 as the dynamics of the carrier market have changed," Current Analysis notes in a recent report. "Much of the CLEC spending that Astral Point was hoping to capture has dried up."

The ON 7000 will face stiff competition from Ciena and Sycamore, and also perhaps from Cisco and Nortel Networks. Ciena and Sycamore offer grooming switches for the metropolitan edge/core, and Cisco has a newly announced metropolitan DWDM platform and is preparing its ONS 15454 SONET ADM as an STS-1 grooming switch.

Nortel, meanwhile, needs to add grooming and cross-connect capabilities to its OPTera Metro lineup to continue to be a leader in the metropolitan optical space, analysts say.

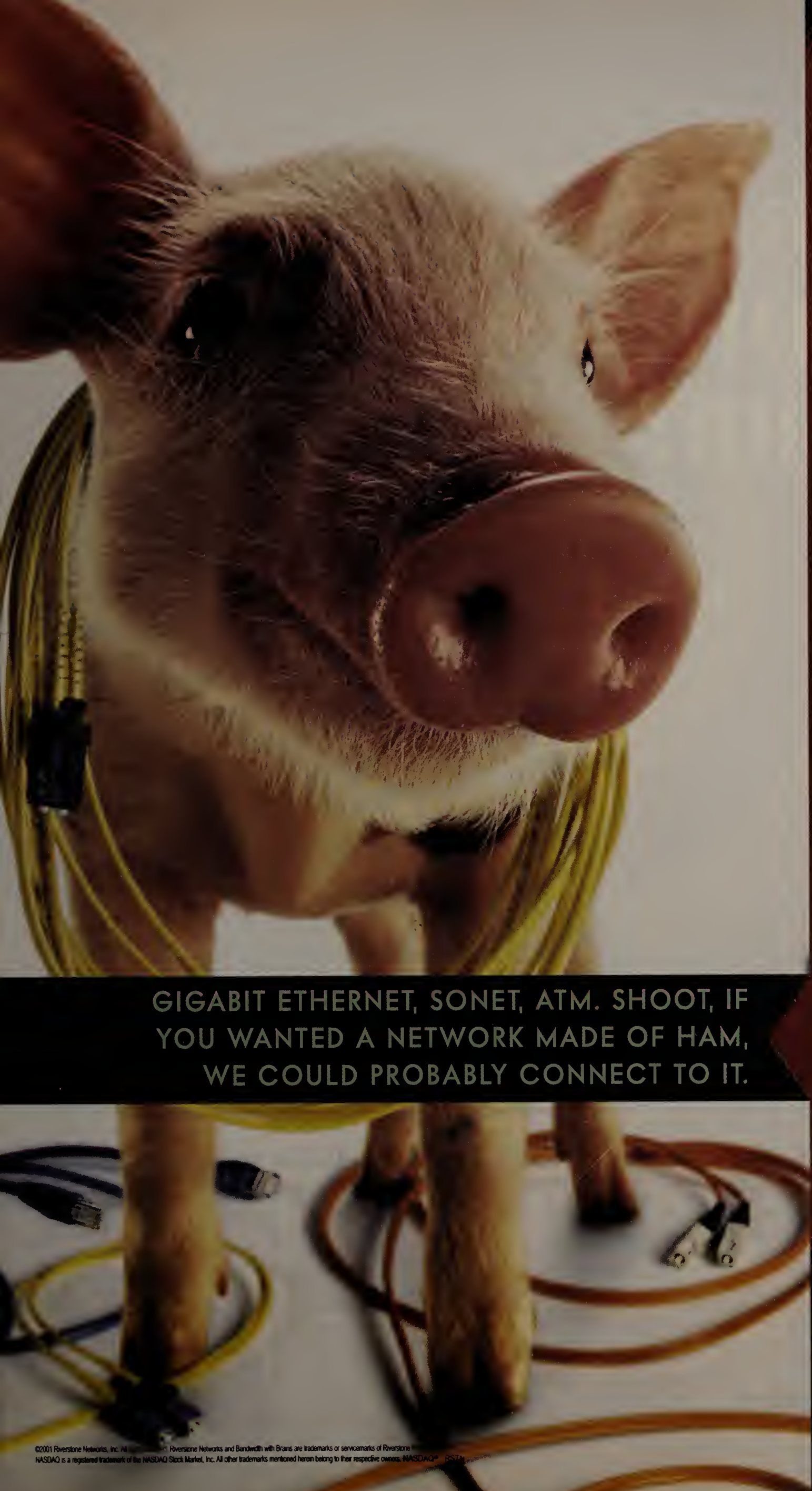
Pricing for the ON 7000 starts at $25,000 per node. Beta tests are expected to begin in the third quarter at multiple ILEC sites. Availability is expected sometime in fourth quarter, Astral Point says. ◪

Equipe,
continued from page 27

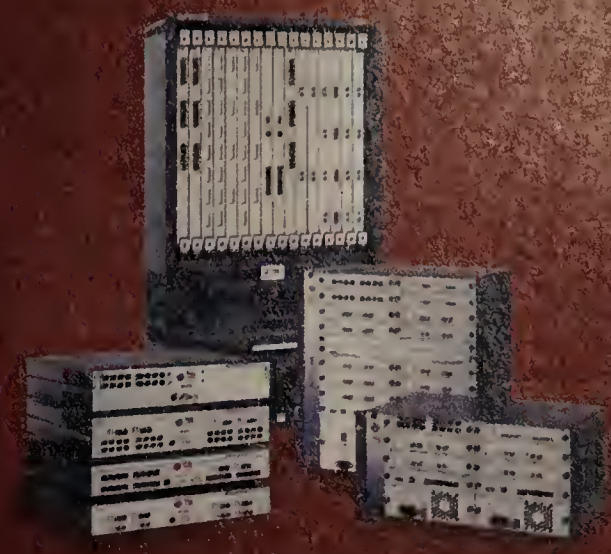
This is instead of a centralized database that may be limited in scale and hard to keep current, Equipe officials say. The E3200 switches also have a policy-based "resiliency manager" that proactively corrects faults; an archival system that collects accounting and performance data; and an embedded security manager that provides auditing, user profiling and resource partitioning.

EvailNet Manager starts at $20,000. It is expected to ship in the fourth quarter.

Equipe: www.equipecom



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Briefs

Cybermation, a Canadian firm that makes job scheduling and workload management software, is readying its first suite of software that doesn't require using a mainframe. While the company has had software that works across distributed servers, a mainframe was needed in the environment. The new Java-based **ESP Espresso,** which has been in the works for three years and is scheduled to be released this summer, will initially run across Solaris and Windows 2000. Later editions will support other versions of Unix as well as Linux. The new software will support XML to smooth interaction among networked machines. Pricing is not available.

Cybermation: www.cybermation.com

The two groups sponsoring the **electronic business extensible markup language initiative** (ebXML) say more than 200 IT organizations, end-user companies and software vendors voted last week to approve a suite of ebXML specifications developed and tested over the past year and a half. The Organization for the Advancement of Structured Information Standards, a nonprofit international consortium that creates interoperable industry specifications based on public standards, and the United Nations Center for Trade Facilitation and Electronic Business, announced the news after a meeting in Vienna. EbXML is a modular suite of specifications designed to let companies of any size and in any country conduct business over the Internet through the exchange of XML-based messages. It is aimed at facilitating global trade by enabling XML to be used in a consistent manner to exchange business data electronically. The ebXML reports are available for free at www.ebxml.org.

2001: The year of the supplier?

BY KATHLEEN OHLSON

There's plenty of blame to share for the business-to-business bust that has seen e-marketplaces implode and once-high-flying software vendors such as Ariba and Commerce One nose dive. The root of the problem for many, however, is that the needs of thousands of suppliers whose participation is critical to generate online business-to-business transactions have been largely ignored.

Attracting suppliers has been tough for myriad reasons. Suppliers fear being commoditized in online marketplaces, having their profit margins squeezed and exposing proprietary catalog information. The initial cost of doing business online — supplier-enablement software from the likes of i2 Technologies and Oracle can start in the high six-figures — has also scared off suppliers, especially small and midsized firms that aren't very automated to begin with.

But online business-to-business proponents say suppliers can benefit, too, by the streamlining of otherwise expensive processes and gaining access to many more buyers. As a result, vendors and marketplaces that have emphasized the "buy side" over the "sell side" of business-to-business e-commerce are now developing technologies and striking up deals to get more suppliers onboard.

"There's an underestimation of the time and work that's required to get suppliers hooked into buyers," says Bill Eisele, a Hurwitz Group analyst.

Although plenty of supplier-enablement software exists — AMR Research says the market is worth $2.8 billion and growing — observers say many offerings have serious drawbacks, such as making it hard for suppliers to change their catalogs once they are posted on the marketplaces.

Vendors such as Commerce One and Requisite are trying to address such shortcomings. They have unveiled offerings that automatically upload catalogs to marketplaces and let suppliers make changes to the catalogs.

Commerce One, as well as companies such as Blue Martini and HubStorm, have also introduced a "round-trip" option in their software that lets a buyer from a marketplace connect to a supplier's Web site where further information about the supplier's offerings is available. This lets suppliers divulge more information to potential buyers that the suppliers might not be comfortable showing on a public marketplace site.

Dale Electric, a Glens Falls, N.Y, distributor of electrical supplies, is refining its catalog of over 100,000 SKUs with HubStorm's eSupplier. The biggest obstacle to Dale's e-commerce efforts was formatting data that buyers could use.

"[Using the software], we saw our data

See **Suppliers**, page 32

Making e-business easier

Here is a sampling of products and services focused on supplier enablement:

Product/Service	What it promises
Excara ContentCenter	Maintains, manages and syndicates product content. Runs as a hosted service.
Blue Martini Channels Application	Publishes catalogs and lets buyers leave an e-marketplace and go to supplier site on the fly.
HubStorm eSupplier	Lets suppliers manage transactions and catalogs through a single interface.

eRoom makes sharing data easier

Real Time Server lets users collaborate on documents.

BY JOHN FONTANA

CAMBRIDGE, MASS. — ERoom Technology is going real-time with its Web-based application that provides online workspaces for sharing documents and organizing projects.

The company this week will introduce its eRoom Real Time Server, which lets users collaborate on documents, hold chat sessions and share applications live over the Web or corporate intranets using only a standard Web browser. The live capabilities will augment eRoom's current asynchronous communication, in which users work on documents one at a time or post messages for future response.

ERoom is also launching another server, eRoom Advanced Server, which provides administrative and management controls to support multiserver deployments of eRoom to handle more than 10,000 users.

IT executives will now have the ability to add real-time features without having to deploy additional products and also gain the type of management features required to scale eRoom across a large company.

"We hope that the real-time features will become a natural extension of what we already do with eRoom," says Rob Ditto, senior IT project leader at The Wharton School of the University of Pennsylvania. Ditto supports users that collaborate on documents and hold online discussions as part of 105 courses in the school's M.B.A. program.

ERoom is the cornerstone of a program called webCafe, an online community of faculty, staff and students. "The most common use is to support course work, and now we will look to add a real-time element." Ditto says he must still determine if the technology will work efficiently for his dial-up users.

Real Time server lets users collaborate on editing and annotating documents and provides a whiteboard, chat, and desktop sharing. The server works in conjunction with eRoom Server.

Other vendors offer similar group collaboration. Lotus has QuickPlace and Microsoft has its SharePoint TeamServices feature of Office XP and SharePoint Portal Server. Other collaboration servers include Intraspect's Intraspect 4 and iManage's WorkSite.

In addition to real-time features, eRoom

See **eRoom**, page 32

www.nwfusion.com

STRATEGIC ALLIANCE

Read how Microsoft and Commerce One are joining forces to integrate suppliers into an e-marketplace environment.

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'Net Insider . Scott Bradner

Is it safe not to go into the water?

So the dot-com boom did just that. Not a fun time in VC-land. Not a fun time in Nasdaq-land.

The Wall Street Journal estimates that just one component of the dot-com frenzy — the telecom companies — has built up a debt of $650 billion in the past few years, with the prospect of outright losses near $150 billion. No matter how you look at it, $150 billion is real money — well, it was real money once upon a time.

At least some of the telecom companies have physical assets that have a half-life of more than 6 months — millions of miles of fiber have been installed just in the U.S. over the past two years. To be sure, most of it is unused — 97% by some estimates. But at least fiber's something that doesn't generally become worthless with the next hardware revision, like old servers and routers do. E-commerce companies such as e-Toys, Pets.com and hundreds more turned purely virtual overnight and wound up being worth a few cents on the invested dollar.

Many of the biggest investments in e-commerce sites came from traditional companies trying to protect themselves from being "Amazoned," as *The New York Times* put it. The term was used to personalize the corporate angst over the possibility of having one's corporate existence wiped from the electronic face of the world by some virtual superstore.

According to the *Times*, $10 billion was spent last year alone on Internet consultants, much of it to prevent Amazonization. Billions more were spent starting overhyped Web sites.

For example, Toys "R" Us is said to have spent $260 million on toysrus.com. I didn't know it was possible to spend that much money to get so little — so little that now when you try to visit www.toysrus.com, you get Amazon.com. Yup — Toys "R" Us got "Amazoned" in spite of the money.

With all this carnage, is it safe for non-Web companies to try to build a Web presence? You can sure spend a lot of money for little return.

Still, I think the question should be turned around: Is it safe for a non-Web company to stay that way? Sure it is. It is also safe for a company with physical stores not to run a catalog business. But if a company already has a reasonable infrastructure, it can make some money from people who happen not to live near a store.

The same is true with the Web. A Web presence may still be a smaller overall business than catalog sales, but if the current — realism-enhanced — trend continues, the Web business will be much larger in a few years.

You can avoid the opportunity if you want to, but it seems foolish. Not quite as foolish as assuming you need to spend tens of millions of dollars getting there. But for some reason, the consultants are getting cheaper these days.

Disclaimer: It's not getting cheaper, but spending money on Harvard seems to pay off. However, the University has not expressed a view on this topic.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sobco.com.

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Suppliers,
continued from page 31

the way the buyer would, and we saw what areas needed to be improved," says Scott Schwartz, president of Dale Electric. The distributor republished its catalog in two days with eSupplier — an effort that he says would have taken two weeks to do manually.

For many suppliers, quickly accessing pricing, customer and other data from disparate back-end systems is the hardest part of conducting online business-to-business transactions. According to AMR Research's Jim Murphy, it could take suppliers up to six months to analyze and collect the data to create an online catalog suited for a marketplace's needs.

Hosted services have become a viable option for some suppliers and these services are also expanding, giving suppliers greater remote control over their content and automating the handling of requests for comments and information.

Hurwitz's Eisele says suppliers can get their catalogs together and upload them in a matter of weeks through hosted services from companies such as Excara and EC Outlook. Excara's ContentCenter service costs about $150,000, including a one-time setup fee and monthly access fee and concurrent user license.

Bridgeport Fittings, a Stratford, Conn., maker of conduit fittings, has hosted its catalog of 2,000 items with Excara since January in an effort to deliver its data in an easy-to-use format to trading partners, including Home Depot, W.W. Grainger and General Electric.

"We wanted to know what [information] we're giving them and ensure for accuracy," rather than rely on a third party to manually enter product changes, says Kirk Whiteman, vice president of administration at Bridgeport.

Through Excara, the company merged its electronic and paper catalogs with images and pictures into one master catalog, and now can make any changes from a Bridgeport desktop.

Despite the improved offerings from vendors, observers say suppliers are well within their rights to remain cautious about participating in online marketplaces. ◪

eRoom,
continued from page 31

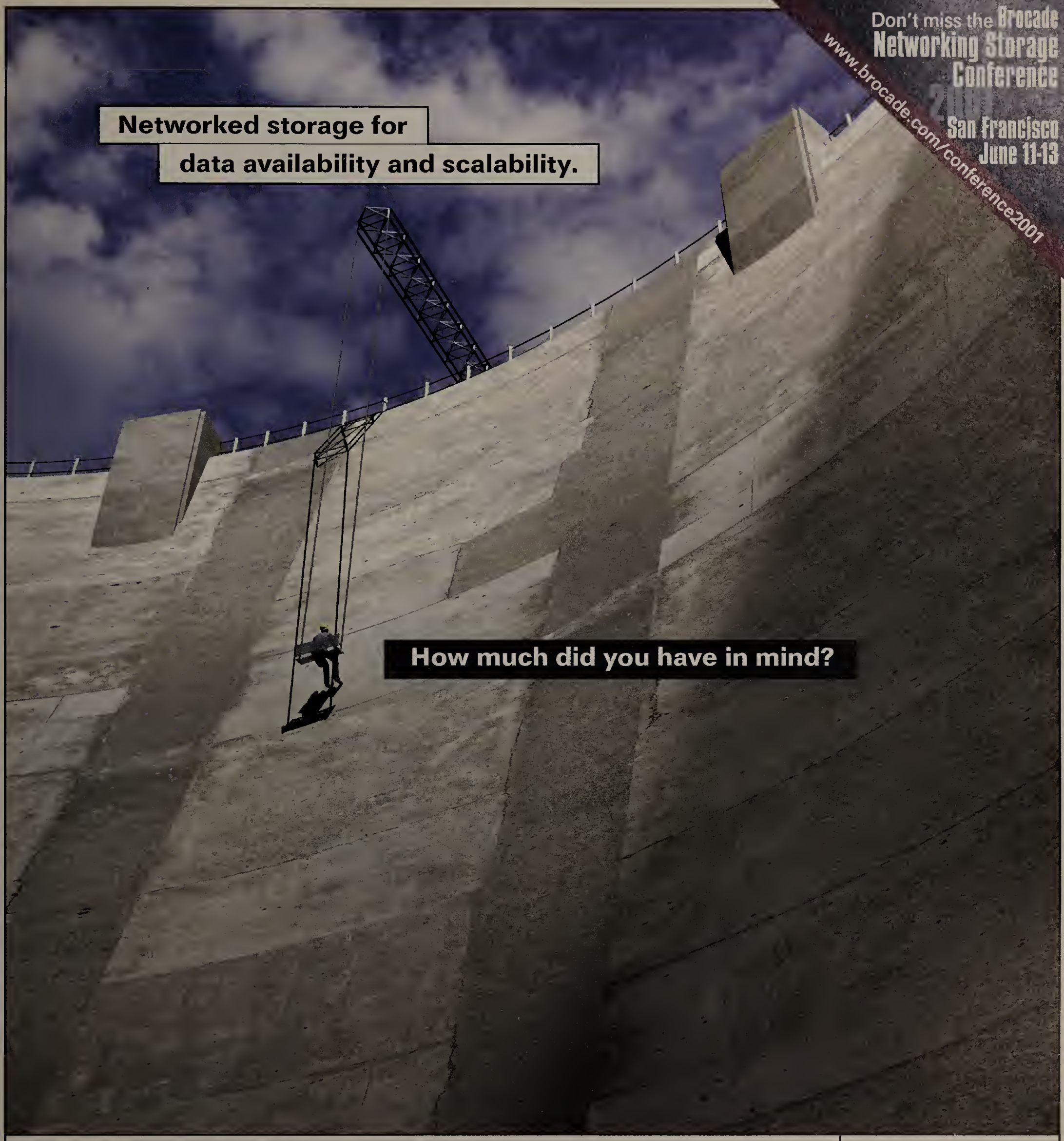
is addressing scalability. Advanced Server has new administrative tools for managing multiple servers and large user populations from one console. The console lets new users be assigned to any server in the eRoom environment.

Advanced Server will only be available through professional services organizations.

Both servers run on Windows NT 4.0 and 2000. Real Time Server runs only with eRoom 5.0 and will not be compatible with eRoom Advanced Server until this fall.

Real Time Server costs $7,500 per server and $150 per user. Advanced Server costs between $50,000 and $70,000. The average price for professional services is $100,000.

ERoom Technology: www.eroom.com



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Portals: The new business desktops

BY JENNIFER MEARS

INTRANET SOFTWARE

Portals can offer everything from security to data management, but how do you choose which one to use?

The executives at business media company Red Herring knew this much: they wanted their company to be "Webified," meaning the firm wanted applications and information, both internal and external, to be accessible from the desktop. The IS group knew something else: It could give users a personalized interface into those digital resources, and it would save money for the company.

It's called a portal, and it seems like everybody's installing one. Corporate portals manage end-user access to a business's network of applications and resources.

Portals can also offer security, end-user administration, collaboration, search mechanisms and data management from a single interface.

Analysts say there are more than 200 vendors offering portal products, and more enter the market every day. In just the past few months companies such as Bowstreet, SAP, IBM and Microsoft have announced portal initiatives to compete against pure-play portal software vendors such as Plumtree, DataChannel, Hummingbird and Epicentric.

But consolidation is happening, too: In the past few months, Citrix acquired Sequioa, and SAP bought TopTier.

As businesses in growing numbers launch intranets and digitize more of their functions, software vendors are realizing that the portal will be the new business desktop.

But as the portal market matures, how do you know what's best for you?

To start, there's the decision of whether to buy packaged portal software or to build the portal in-house. At Red Herring, Intranet Manager Eric White says the decision to buy was easy.

"We decided not to reinvent the wheel," he says. "It's at least 50% cheaper to buy. It depends on your scale; it could be as much as 90% to 95% cheaper."

White says Red Herring paid a little more than $100,000 for its Plumtree enterprise portal, which includes search and collaboration features, as well as single sign-on, and access to internal and external resources and applications.

"To come up with anything that was even close to it [in-house] would have cost us hundreds of thousands of dollars," White says.

Choosing a portal

Increasingly, consulting firms such as IDC, Delphi Group and Adventis are developing programs to help businesses decide whether a portal is the right way to go, and which portal vendor is the right one to choose.

At Red Herring, the IS group handled that task, attending seminars and conferences to educate group members about what was available. They determined a portal would be beneficial because it would do more than simply link internal and external resources as executives wanted; it also would create an easy-to-use interface that would give employees a customized "window" into all the business information they needed.

That interface would lead to better employee relationships, heightened productivity, and time and money savings, White says.

Red Herring narrowed the choices to four vendors, and received information from three: Sequoia, Viador and Plumtree. White says he decided to go with Plumtree because Sequoia "was so Microsoft-centric, we couldn't use anything but Microsoft on the back end."

Red Herring needed a portal that could integrate easily with its Oracle databases, he says. As for Viador, White says its software offered an open platform but required too much customization.

"We wanted to keep this so we could do it with under five people," White says. Because Plumtree had most of the functionality Red Herring needed out of the box, "we could literally get this thing installed, get it up and running in three days, with five people."

Building a portal in-house

For Soren Burkhart, first vice president and head of International Internet Systems for Bank One, an off-the-shelf product wasn't the answer, at least initially.

Bank One has a retail portal it built in-house, but about a year and a half ago Burkhart decided he wanted to consolidate the Internet-based applications his department develops to streamline foreign-exchange transactions. He knew it would be a complex undertaking, so he looked for a portal vendor that could help him do it quickly and maintain Bank One's competitive advantage. After looking at companies such as IBM and Plumtree, Burkhart settled on Epicentric, primarily because of its Java-based, open architecture.

"We wanted a good framework in which we could deliver our product set; we didn't want a religion," Burkhart says. "The last thing we wanted to do was have this perfect thing that was all completely built by Epicentric, and then one of our competitors buys it and gets the same thing."

It took about three months to integrate Bank One's applications into the portal and customize it to give foreign-exchange customers real-time quotes, and aceess to analysis and other information online. The new portal also let Bank One reduce its internal transaction processing time from two days to 5 minutes, Burkhart says.

Burkhart says the portal, which has been up for about a year, generates about $2 billion in trades per month.

Had he decided to build a portal in-house, he says, it would have taken at least 18 months — "and that's about $36 billion in trades."

Two more takes

For Steve Garten, manager of the finance and administration group at Poten & Partners, an energy brokerage and consulting company, infrastructure was important.

Poten's back end is about 80% Microsoft. Poten chose InfoImage to power its portal in large part because of its strong alliance with Microsoft, Garten says.

Separately, Bevan Ashford, one of the top law firms in England, took another route to a portal. The firm had been using an intranet for years but had never developed a single interface into its Web-based applications and resources. That meant users had to load applications and log on to different legal-resource services separately.

The law firm already was using a knowledge management tool from Hummingbird, which has its roots in serving the legal industry, so it was "a logical next step" to look to Hummingbird for portal software, says Heather Robinson, the firm's head of IS.

In the end, says Mike Robinson, Bevan Ashford's IT direetor, a portal simply should be good for business: "It's got to be simple, it's got to be easy, and it's got to fit into your environment." ◪

Setting up shop

Things to consider when launching a corporate portal:

- **ROI:** Define what business problems the portal will solve.
- **Easy fit:** Review existing infrastructure technologies — from directories to security systems — and make sure the portal integrates with them.
- **Pricing:** Consider starting with per-server CPU pricing, only switching over to per-user pricing once portal usage patterns are determined.
- **Growth potential:** Make sure software can be upgraded to support new features and standards.
- **Smooth adoption:** Launch an internal marketing campaign to promote the portal and roll it out in phases.

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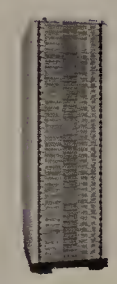
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Technology Update

An Inside Look at the Technologies and Standards Shaping Your Network

Ask Dr. Intranet



By Steve Blass

When our Web site customers click the order-submission button multiple times, duplicate orders are created. Can we generate a unique order identifier from within a plain HTML page so duplicate submissions won't result in multiple orders?

Create a unique identifier in a regular HTML file by using a JavaScript-generated time stamp. You can include it as part of a hidden field in the form being submitted to prevent duplicate database records from being created. See the following sample code:

```
<html> <head> <script language = "JavaScript">
<!—
function usnotime() {
var ut = new Date();
var time = ut.getTime();
document.rform.recordID.value = time;
}
function thanks(){
tWin=window.open("","thanks");
tWin.document.write("Thank you");
tWin.focus();
}
//—>
</script> </head>
<body onload = "usnotime()" >
Timestamp Test Form
<form method = "POST" action = "javascript:thanks()" name = "rform" >
<input type = "text" name = "recordID">
<input type = "submit" value = "Order Now" name="submit">
</form> </body> </html>
```

Blass, a network architect at Change@Work in Houston, can be reached at drintranet@changeatwork.com.

Internet storage boosts Web sites

BY JOSH COATES

The proliferation of rich media on the Internet has created new challenges for Web site owners. Because rich-media files are much larger than static Web objects, they tax storage and network infrastructures.

Web sites typically have addressed storage requirements through traditional network-attached storage and storage-area networks. A new type of offering, known as Internet-based storage or Internet storage infrastructure, is designed to meet the challenges of hosting rich media by using a bottoms-up approach to develop a new type of WAN storage infrastructure.

Internet-based storage, which is derived from distributed object technology, lets companies avoid building their own legacy storage infrastructures. Companies can sign up with an Internet-based storage service vendor and buy storage as needed.

Furthermore, by using enhanced features such as geographic mirroring, load balancing and a global file system, Internet-based storage vendors can offer new services.

An Internet storage infrastructure consists of strategically placed data centers serving data from hot storage to end users. Subscriber data is distributed and mirrored across data centers that serve information to users from the best location.

A key component of an Internet storage infrastructure is global load-balancing technology, which directs users to the optimal global data center. Load-balancing technology is further used to direct users to the optimal server cluster within that data center. End users can access the data from the nearest data center or through the host's Web servers.

Through mirroring, redundant hardware and intelligent networks, Internet-based storage providers can offer customers high reliability in the form of service-level agreements. Of course, on their end, Internet-based storage providers must have solid disaster-recovery systems so they can protect customer data in case of an emergency.

Internet-based storage offers several benefits for customers, including:

- Cost. Under the pay-as-you-go, terabyte-on-demand model, customers avoid capital investment and don't have to worry about underestimating or overestimating their storage needs. In addition, because Internet storage is fully managed, customers off-load storage staffing burdens.
- Global access. Providers of Internet storage will maintain redundant data centers to ensure data availability. Companies can connect to multiple providers to get a high level of performance and reliability. And a global file system will provide users with access to data from any point on the Internet. A global file system also means that companies with multiple hosting locations don't need to keep redundant storage systems.
- Security. Internet storage providers will have to ensure that data is protected.
- Time to market. Customers can store terabytes of data within hours, or literally as fast as they can upload the information to the Internet storage provider.
- Flexibility. Currently, net managers are forced to overprovision their hardware to accommodate their largest-case storage demand forecast. Using Internet storage services, subscribers only pay for what they use. This lets subscribers defer storage expenditures. Instead of building a storage infrastructure in advance of rising demand, customers pay as they go.

For Web sites, performance is a fundamental differentiator. The key performance metrics for any Web content-delivery network are latency, bandwidth and quality of service. An Internet storage infrastructure sits near the network core, where high-performance connection arrangements ensure low-latency data transfers.

The extensive networking connecting Internet storage infrastructure facilities also provides ample bandwidth for most users. In some situations, edge delivery networks may be required to meet performance expectations.

Fortunately, the distributed nature of the Internet storage infrastructure makes it highly complementary to existing content-delivery networks. Sites hosting infrequently accessed data can use Internet storage services to store and deliver the masses of infrequently accessed data, and can use the edge cache network of a content-delivery network service provider to distribute high-demand content.

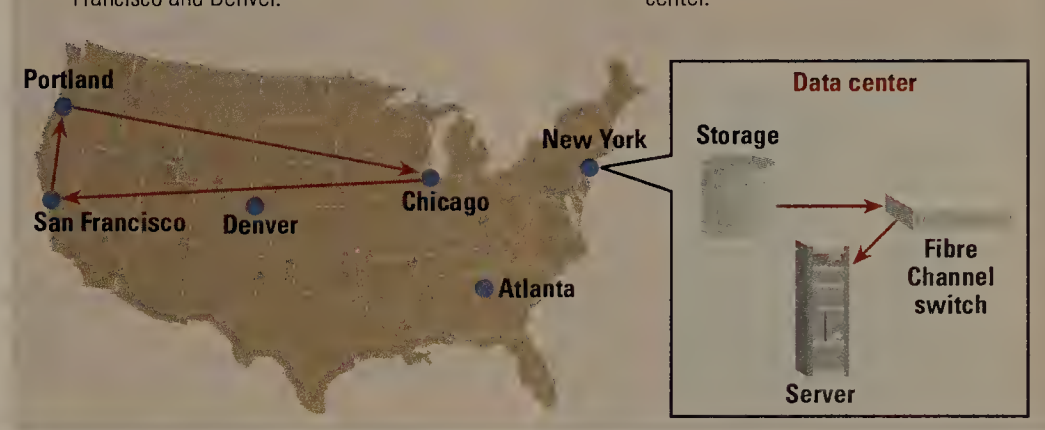
By combining content-delivery network services and Internet storage services, Web sites can improve performance, reduce costs and off-load the burdens of storage scalability, bandwidth and IT staffing. The Internet storage provider owns and manages the global file system, storage equipment, network operations and support.

Coates is the founder and CTO of Scale Eight. He can be reached at jcoates@s8.com.

Internet-based storage infrastructure

An Internet storage infrastructure consisting of distributed data centers and global load balancers can provide quick access to rich media on the Web.

1. Corporate data is housed in Atlanta and Chicago. Company distributes copies of rich media to vendor data centers in New York, San Francisco and Denver.
2. End user in Portland requests rich media from main corporate site.
3. Load-balancing technology on company network directs user request to the San Francisco data center.
4. Data center delivers rich media to end user.



Got great ideas?

Network World **is looking for great ideas for future Tech Updates. If you've got one, and want to contribute it to a future issue, contact Features Editor Neal Weinberg (nweinberg@nww.com).**



Gearhead . inside the network machine . Mark Gibbs

GETTING RID OF SPYWARE

Before we discuss spyware further (as promised last week), we must point you to the URL for Click Bot, a utility recently discussed in Gearhead (www.nwfusion.com, DocFinder: 4327).

Many people couldn't find the software's Web site, so here's the location: http://blake.prohosting.com/clickbot/ (the Google search engine, at www.google.com, finds the home site).

Spyware, also called adware, is frighteningly common. The list of spyware software is a long one and includes Adware, Alexa, Aureate, Comet Cursor, Cydoor, Doubleclick, DSSAgent, EverAd, Flycast, Gator, Gratisware, OnFlow, SaveNow, Flyswat, TimeSink, HotBar, Web-3000 and Webhancer.

You can find these subsystems embedded in more than 800 programs and utilities (including, much to our disappointment, CuteFTP and Surf Saver, previously recommended by Gearhead).

You can see a list of spyware at www.infoforce.qc.ca/spyware/enknownlistfrm.html).

We need to be clear on what spyware does, doesn't, and could do. To our knowledge, no major or most common spyware sends personally identifiable information about you back to some collection point. What these tools do — as far as we know — is log your exposure to advertising and report what you see, as well as when and for how long.

But what spyware could do is limited only by your imagination. Any time anyone plants hidden functionality on our computers that sends information of any type out of our systems without our knowledge, we get cranky.



To find out what spyware might be on your systems, download a free utility called Ad-Aware from German firm Lavasoft (www.lavasoft.de/aaw/aaware.html). Ad-Aware is a relatively small Windows application that scans your memory, registry and file system looking for known spyware. It is fast, easy to use and free.

Ad-Aware can be configured to run at system start-up. We immediately ran it on one of our workhorse PCs and my, my, my. Spyware everywhere!

We had all the leading spyware installed, although most of it was inactive (much of the spyware out there is poorly coded). Ad-Aware lists all suspicious findings and lets you select which should be sent to the bit bucket. Neat.

The only problem we encountered was that the program aborted unexpectedly in low-memory conditions and couldn't remove the Webhancer software in Surf Saver, a utility that integrates with Internet Explorer. But the bottom line was that Ad-Aware removed almost all spyware it found and told us what it couldn't remove without running by itself on a newly booted system.

For $12 you can purchase Ad-Aware Plus, which includes a utility called Ad-Watch. Ad-Watch runs in the background monitoring for spyware trying to install itself. When spyware is detected, Ad-Watch blocks the installation, runs Ad-Aware and alerts you.

We award Ad-Aware nine gear teeth out of 10 and kudos for being free.

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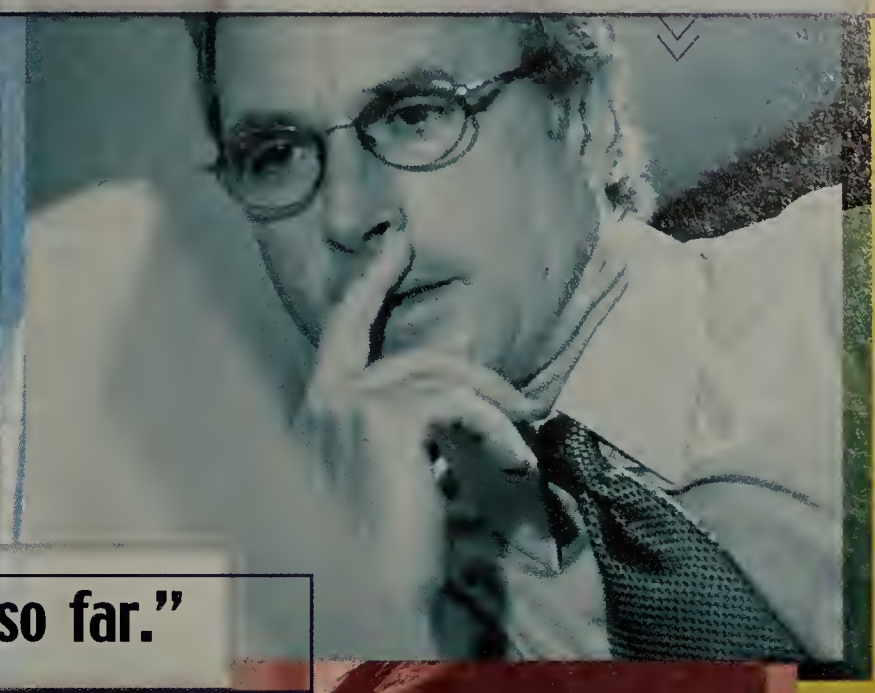
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Editorial

Project Pronto bucking along with fiber help

SBC Communications used NetWorld+ Interop to outline progress on its Project Pronto broadband plan and threw in some interesting news about the role passive optical networking will play in Pronto.

Pronto, if you'll recall, is SBC's $6 billion effort to deliver broadband access to 80% of its customers, mostly through DSL. Progress so far:



- 1,300 SBC central office switches have been upgraded to support DSL, roughly 90% of the original goal.
- 3,000 of the 20,000 planned remote fiber nodes have been installed. SBC needs these to keep DSL loop distances less than 12,000 feet, the optimal distance for DSL.
- It has installed 954,000 DSL access lines
- Customers are ordering 6,000 DSL lines each day, and 90% are self-installed.

SBC Executive Vice President Ross Ireland is bullish on DSL, even while admitting it may never overtake cable (which had a two-year head start). He says there are 5.5 million cable modems installed today and only 2.5 million DSL users.

Now begins what SBC is calling the next phase of Pronto: use of passive optical network (PON) technology to deliver fiber directly to small businesses. With PON, SBC can drive a fiber into a neighborhood and then use a small, inexpensive, nonpowered (hence passive) device to fan the signal out onto multiple fibers for delivery to endpoints.

By combining PON with wave division multiplexing, the firm says it can deliver several high-bandwidth channels to multiple customers over a single, long-distance fiber run. Ireland says fiber delivered in this fashion costs about as much as two T-1s, whereas the crossover point for SONET-driven fiber is 12 to 18 T-1 lines.

SBC expects to migrate 1,000 businesses to PON this year and 9,000 next year.

Besides driving fiber deeper into the network and better positioning the company to deliver fiber directly to customers, the firm says using PON to migrate T-1 traffic off the copper plant will make it easier to accommodate more DSL users on that aging metal.

Overall, the architecture seems elegant. One caveat: Splitting signals with a passive device will require SBC to deliver all content to all endpoints, which raises security concerns. SBC will have to jump through some hoops to convince businesses that their traffic is safe.

— John Dix
Editor in chief
jdix@nww.com

Message Queue

Uncertain future

Regarding the editorial "CERT looks to cash in on security data" (www.nwfusion.com, DocFinder: 4322): Kill the federal subsidy. Let CERT pay just like the other Internet Security Alliance members. That way, the "old" CERT will definitely be gone and the "new" CERT will be left without undesirable dependence on the U.S. government and taxpayers.

Stephen Brumbelow
Information technology consultant
Gallatin, Tenn.

Perhaps the more difficult question to answer is what will happen to informing those who are not in CERT's paid loop. If I understand this correctly, in order to be notified about security problems immediately, you have to pay a fee to one of the groups that started this process. If you don't pay upfront, you will pay in the end by your failure to protect yourself.

Sounds like CERT and its friends are liable as accomplices to attacks performed on the Internet. Sounds like the definition of a crook to me.

If you know of an impending bank robbery and fail to notify authorities of it, you are going to get a call from the FBI and almost certainly will be prosecuted. So aside from the double dipping of the taxpayers, if I were CERT or one of its partners in this foolishness, I would keep my head down.

Mark Robinson
Owner
Robinson Consulting
Everett, Wash.

Worth the pain

Regarding your feature "Lockdown" (www.nwfusion.com, DocFinder: 4323): I've been part of a project that completely locked down the desktop environment.

As of a week ago, users are only allowed to use applications and functionalities that are made available by means of Novell ZENworks for Desktops.

Users can have whatever they request as long as it's legal, doesn't interfere with the company policies or the end users' abilities to do their jobs and doesn't require manual intervention to become functional again after re-imaging the workstation.

The result: a 90% decrease in help-desk calls. One thing the article correctly points out is that one can't reach these awesome results without complete management commitment.

Lockdown is a painful, stressful, even a "why did I even consider it" kind of approach, but the rewards are simply too great to ignore. Not only will you get to know exactly how your environment functions, but you'll see a great reduction in help-desk calls and overall downtime. All that is required is enough management commitment to make it through the first months of attitude adjustment.

Arthur Bommele
Vlissingen, Netherlands

Nothing new

Regarding "Microsoft pumping up directory for Web use" (www.nwfusion.com, DocFinder: 4324): There seems to be a lot of attention paid to inetOrgPerson. Novell Directory Services eDirectory has had this capability for at least two years. Also, Microsoft's Active Directory needs to do much more than just become Internet-friendly if it's going to be any match for more mature, Lightweight Directory Access Protocol-compatible directory services such as Novell's eDirectory.

For instance, can Active Directory actually handle one billion objects?

Novell's eDirectory can. Can you put portions of the Active Directory database at remote locations, replicate changes between locations and schedule when that replication will occur? You can with eDirectory.

Can you easily upgrade from Version 4.x to the new directory version?

You can with eDirectory. It's really a shame that Microsoft gets so much press when its products really don't deserve it.

Jeff Couillard
Novi, Mich.

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, *118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.*

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The Packet Evangelist . Steve Taylor

ISDN Error: The end of an era

I never thought I'd be sorry to see a technology go. But I felt a twinge of sadness this morning when my ISDN Basic Rate Interface service was turned off and the control unit read "ISDN Error." Unfortunately, the errors that are leading to ISDN's demise are not due to poor design, but to the fact that the world has changed and ISDN hasn't adapted.

The first ISDN error was a miscalculation of the demand for bandwidth. When ISDN was first designed, 1,200 bit/sec modems were current. LANs didn't exist; essentially all enterprise computing consisted of host-terminal computing with text-only terminals. In this environment, there wasn't much difference between 64K bit/sec and infinity when planning for needed data bandwidth.

Then Ethernet beat the voice/data PBX in the battle for data distribution within organizations. But ISDN still had a major play in the WAN. After all, 64K to 128K bit/sec was a lot faster than a dial-up modem — until asymmetric DSL (ADSL) and cable modem service came about, providing 10 to 20 times the bandwidth for a cheaper price.



But there's still voice, right? Indeed, the voice services provided by ISDN can't be beat. The sound quality and features are great. Combined with appropriate termination equipment, the ISDN line can perform like a fully functional PBX with call processing, menus for variable call processing and other features that rival or exceed functions available from service providers. However, while a few companies produced some sophisticated ISDN equipment, the market wouldn't support the requisite price for making this a continuing business.

But the biggest ISDN error was the pricing. ISDN services were never priced on par with analog voice services. In my BellSouth service area, a residential ISDN line costs more than two residential voice lines plus ADSL or cable modem service. Nevertheless, for more than a year, we kept the ISDN service in parallel with cable modem and ADSL service simply because the voice capabilities were so cool. But few of us can justify paying more than $100 per month for two admittedly really cool voice lines. That's when we finally decided to decommission the ISDN and revert to analog voice. Analog voice provided the needed functions for voice, and the price differential bought at least a bottle of really good wine every month.

So do we play taps for ISDN? Not just yet. If you can't get an advanced access service, it still beats modems. And ISDN will be around for quite a while as an interface between the corporate PBX and the public switched telephone network.

And if service providers were to adjust the pricing so that ISDN was on par with analog services, I would consider dusting off the equipment and reinstalling it. But by that time we'll be using our high-speed data connections for voice as well as data.

Taylor is president of Distributed Networking Associates in Greensboro, N.C. He can be reached at taylor@webtorials.com.

Reality Check . Thomas Nolle

The Tauzin bill: Regulations, opportunity and competition

The debate being raised by the Tauzin bill (HR 1542), which would amend the Telecom Act of 1996, proves two things. First, hardly anyone can read legislation — or at least bothers to do so. Second, we need a new conception of "competition" in the industry.

The Telecom Act made the regional Bell operating companies sell services at wholesale prices and unbundle their infrastructures to help offset the advantages they gained by building their networks under monopolistic protection. By accident or design, this requirement was extended from voice networks, where the RBOCs clearly enjoyed monopoly benefits, to data networks.



The RBOCs, which in 1996 had a relatively minuscule data business, immediately complained that this requirement prevented them from building profitable data networks.

OK, so why isn't it fair for the RBOCs to be free of this requirement? Well, it probably is fair, but it is still opposed by AT&T and most of the competitive local exchange carriers (CLEC). Why? Because anything that helps the RBOCs hurts the interexchange carriers and CLECs? It might seem that way, but a close examination of the bill and of market history makes me wonder.

First, the Tauzin bill doesn't change the voice regulations in the Telecom Act one bit. Voice infrastructure and services are still subject to unbundling. Copper loop, a specific target of unbundling in the act, must still be unbundled. CLECs can still wholesale



loops, collocate gear and ask for line sharing of DSL and voice spectrum on loops. In fact, the only thing the CLECs couldn't do under the Tauzin bill that they can do now is demand wholesale rates for obtaining RBOC DSL and data services so they could resell this service to customers. Killing that one point, opponents say, kills "competition."

Well, what kind of competition do you get when one company actually provisions the service and others simply remarket it? Wholesale buyers aren't competitors; they're distributors. You can't cut prices to the consumer by increasing the number of resellers in the food chain. If the CLECs want to provision services themselves, there's nothing in the bill that affects that decision at all.

Which raises the issue of opportunity as it relates to competition. We made a mistake with telecom reform. Regulations don't create competition; opportunity creates it. Anyone who bothers to read the RBOCs' financials knows that the rate of return on local exchange and access services is low — less than 15% in most cases. Wall Street wants a minimum of 25% return on investment (ROI), which is why the various "emerging carriers" started submerging instead. Forget all the arcane and deceptive measures of carrier valuation. ROI is what The Street wants, and only ROI will rehabilitate the emerging carrier sector. Getting a wholesale deal on service from an RBOC isn't going to create a 25% ROI, gang.

What does that say about future competition then? Simple: We'll have competition where ROI is high. That isn't access, it's more in the service area. The Tauzin bill mandates that the RBOCs provide interconnection of others to their high-speed data networks to permit these other players to gain access to customers. Obviously, those carriers would be gaining access to sell services. That's where the competition must come in. If emerging carriers get out of the high-capital-cost, high-risk, low-ROI access business, they can focus on building networks that create services customers are willing to buy. ROI on frame relay averages about 35%; on IP-over-frame VPNs, it's about 53%. Those numbers would make Wall Street happy with the emerging players again.

There is no excuse for throwing around shortsighted clichés about how the Tauzin bill "hurts competition." Without access reform, there won't be any competition, because there won't be any survivors but the RBOCs. The thing critics of the bill are going to bring about, if they succeed, is the very loss of competition that they claim to fear.

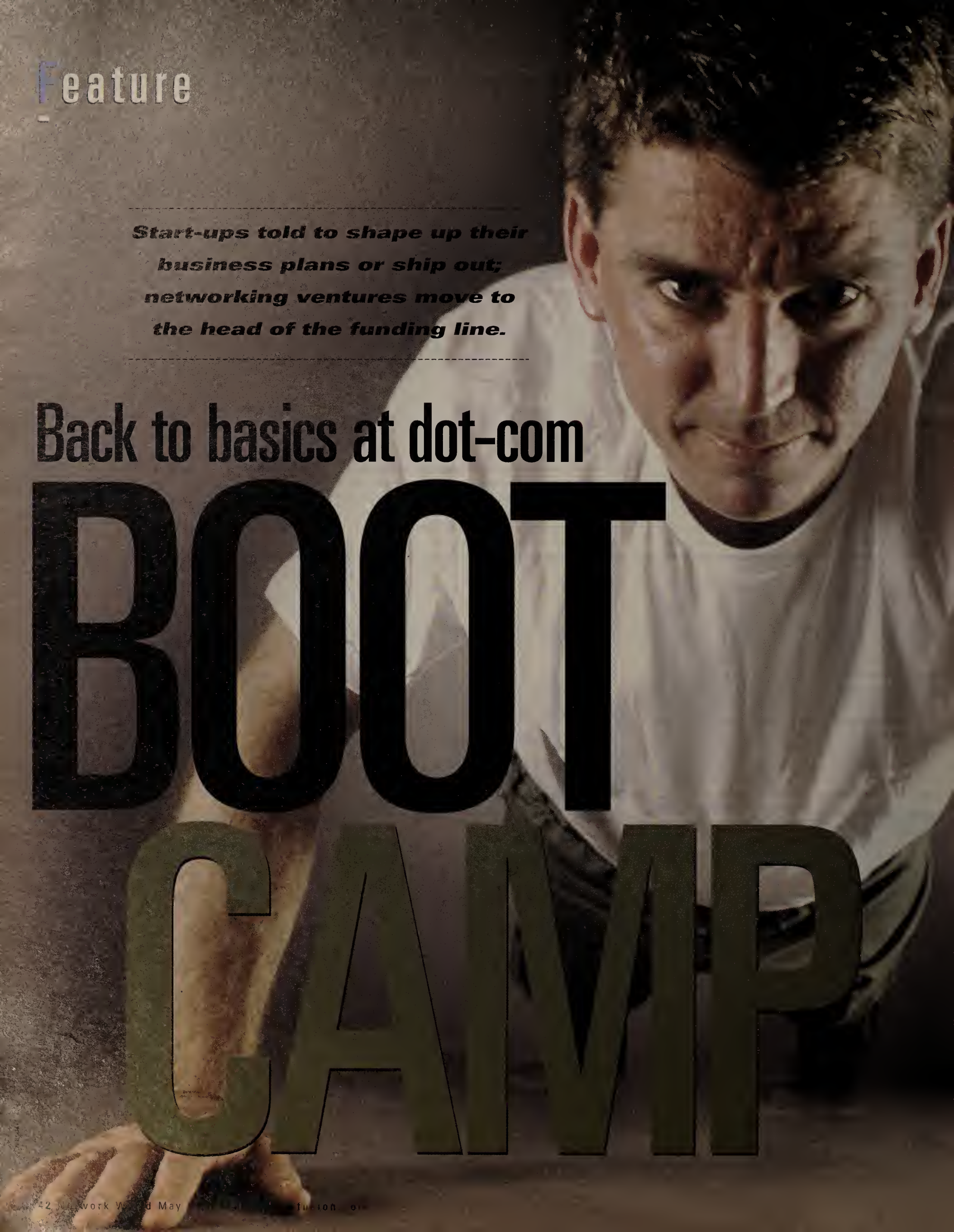
Learn to love this bill. It's the hope of the market, not an anticompetitive sellout, and that's the truth.

Nolle is president of CIMI Corp., a technology assessment firm in Voorhees, N.J. He can be reached at (856) 753-0004 or tnolle@cimicorp.com.

Feature

Start-ups told to shape up their business plans or ship out; networking ventures move to the head of the funding line.

Back to basics at dot-com BOOT CAMP





BY SHARON GAUDIN

The first round of the Internet boom is over. If you missed it or if it ate you alive, then maybe — if you have the chops and the business experience — you can try E-business 2.0. But this time all those profits-can-wait, throw-money-at-it-and-they-will-come notions are history.

It's time to say goodbye to the Dockers and latte crowd who threw lavish launch parties and bought everyone Herman Miller chairs. Gone are the days when a kid with a clever idea was getting millions of dollars in funding before he was old enough to legally buy the champagne to celebrate.

And welcome back buttoned-down and experienced, according to coaches at a recent boot camp for start-ups seeking venture capital. It's time to call in the reinforcements.

Remember the never-worked-a-day-without-a-tie boss who believed in military-style management over touchy-feely team decision making? Thought he had been put out to pasture? Well, he's on his way back and he's going to nix the office-as-frat-house idea and make the profit-and-loss sheet the office bible.

That was the verbal image coaches were projecting from the stage overlooking a ballroom at the tip of Chicago's Navy Pier. A sea of largely 30-somethings in stylish black filled the room, soaking up tips on how to avoid becoming yet another Internet has-been.

While many admitted to being nervous about going out for first, second or even third rounds of funding, each one thought they had what it takes.

They understand that, statistically, the odds are stacked against them. That's why they turn to the boot camp, says Guy Kawasaki, CEO of Garage.eom and host of the recent dot-com boot camp. "A few years ago, it was all about which money to take," Kawasaki says. "A few years ago, we felt every start-up would succeed. Now we're on the opposite end. We think most won't succeed. We went from irrational exuberance to irrational pessimism."

Kawasaki and other venture capitalists agree that funding has dried up in just about every sector, except networking. And even for network start-ups, it's not going to be easy.

Today, you're going to have to fight for your funding, says the boot camp drill. You'll have to know your competitors better than they know themselves. You'll need tested technology and lubricated distribution channels, along with brand-name partners that are willing to take you where you want to go.

"There's a lot more pressure now," says Jon Zeeff, CTO at SolidSpeed Networks of Ann Arbor, Mich., which received its first round of funding in December 1999.

SolidSpeed provides content delivery network services as well as Web site performance testing and reporting tools. "People in a position to put off [looking for funding] are putting it off. Some people are scaling back, cutting costs so they can wait longer before they need more funding."

Zeeff says a year and a half ago, getting money was the easy part. Today, he's nervous about venturing back into the venture capital arena. Those nerves are what pulled him into the boot camp sessions — sessions like "Surviving the storm," "Perfecting your pitch" and "On the firing line."

All of the sessions at the boot camp were packed. Amid the spattering of ringing cell phones and beeping pagers, boot camp recruits were trained to make the perfect 45-second sales pitch, so they could woo would-be funders at a meet-and-greet cocktail party or in an elevator if they had to. They were told how to work the press before a launch and how to find "angel investors," people with money to spend on a potentially good business deal.

Chris Melching, Garage.com's presentation coach, says Zeeff has good reason to be nervous. "You're in a real tough time to get funding," says Melching, who coached about 400 entrepreneurs on how to not sound desperate when pitching venture capitalists and how to find out if you and your prescntation are boring. "But it's also a great time because if you do get funding, it's because you're the best of the best. Chances are good you're going to succeed."

Networking stays afloat

At one point during the boot camp, a panel of five venture capitalists and industry observers was asked to rate various markets. Business-to-business got a unanimous thumbs down. Software and telecom got a mixed review with mostly negative comments. The semiconductor area was also mixed. Wireless received more positive comments than negative.

But networking received a unanimous thumbs up. All the industry gurus there said networking — particularly Internet infrastructure — is the only arena with any life at this point.

"It is 10 times harder to get funding today," says Garage.com's Kawasaki. "Networking is the thing. That's technology. That's not clever ideas. . . . Even that area is crowded, but at least these [proposals] will get read."

Zeeff adds, "Our space, the infrastructure space, is a good area. Infrastructure is the arms merchant. You're selling tools to people out there building companies. If they want to sell books, they have to come to us to help them do it."

> ***"They were saying there was a new financial model. Anybody with an idea had money thrown at them. But there is no new business model. It's all about profits and losses."***
>
> ***— Susan Smith, industry consultant***

Ellen Carnahan, a venture capitalist with Chicago's William Blair Capital Partners, says she is focused on the last mile between the metropolitan-area network and the corporation.

"We want to make the edge more efficient," says Carnahan, who immediately after leaving the boot-camp stage was besieged by a swarming group of eager entrepreneurs armed with business cards and well-practiced pitches. "We're talking about a hybrid of storage and caching with intelligent routing, . . . [We're looking for] more intelligence in the devices."

Back to Business 401

They're also talking about more intelligence in the business models.

"It takes more due diligence," says Cliff Meltzer, CEO of Digital Fountain, a San Francisco on-demand content delivery company that is starting its crusade for another

round of funding several months ahead to avoid running out of cash. "You need a management team with product experience and organizational experience.... You have to show how you're going to be profitable."

Bill Reichert, president of Garage.com and a coach at the boot camp, says successful start-ups need to have working technology and they need to have a business plan that can't be knocked over with a sledgehammer.

"There are lies and then there are business plans," Reichert says to a rapt audience scribbling notes. "Only one is going to get funding."

Anyone with the potential to fund your company — whether they're a venture capitalist, a friend or your in-laws — is going to be scrutinizing your business plan, financial projections, established distribution channels, business partners and management team, Reichert says.

Michael Bernstein, national director of Grant Thornton's E*tech Practice, a financial and management consulting firm in Vienna, Va., says it's time for experienced business combatants to boot the whiz kids to the back of the bus so they can take over driving a good idea forward.

"You still see four guys and a business plan getting funding but [venture capitalists] are looking for a deeper business plan and they're looking for people with more experience," Bernstein says.

Bernstein and Reichert agreed that once an entrepreneur has the makings of a good business, that person needs to "build a veteran class" -- a management team with the experience and power to make things happen. Find business people who have run distribution at IBM, managed development at Lucent, or already throttled through a successful start-up.

"There's a different tone in the marketplace," says Susan Smith, an industry consultant with Performance Consulting Group. "It's more tempered. We've gone back to the basics."

Round one is over

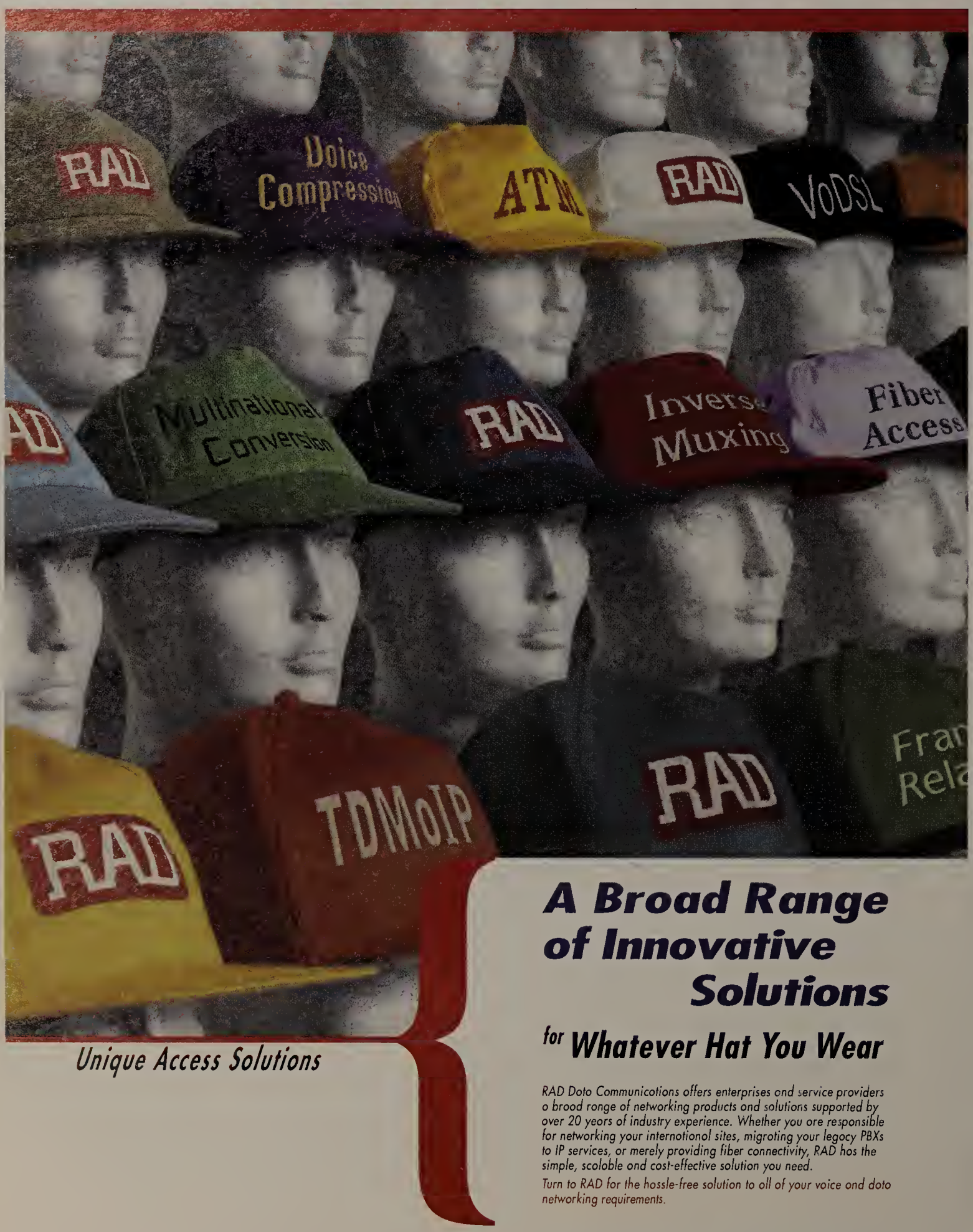
That's because dot-coms have fallen from grace. At least 327 have shut down since January 2000, and half of that number have closed their doors in the past three to four months, according to Webmergers.com, an e-business analyst firm. Research by Webmergers.com also shows that the approximately 52 Internet-based businesses that closed shop in February alone represented more than $1.5 billion in investments.

And a study released in March by Rosen Consulting, an economic research firm in Berkeley, Calif., estimated that 80% of existing Internet companies in San Francisco will go out of business in the next year.

The gold-rush reality was virtual. But the financial turmoil it's wreaking is real.

"They were saying there was a new financial model," Smith says. "Anybody with an idea had money thrown at them. They figured they would worry about profits later, but the losses were mounting. Companies would come out with [poor] quarterly reports and the stock would go up. It defied common sense.

"But there is no new business model. Business is business," she adds. "It's all about profits and losses." ◪



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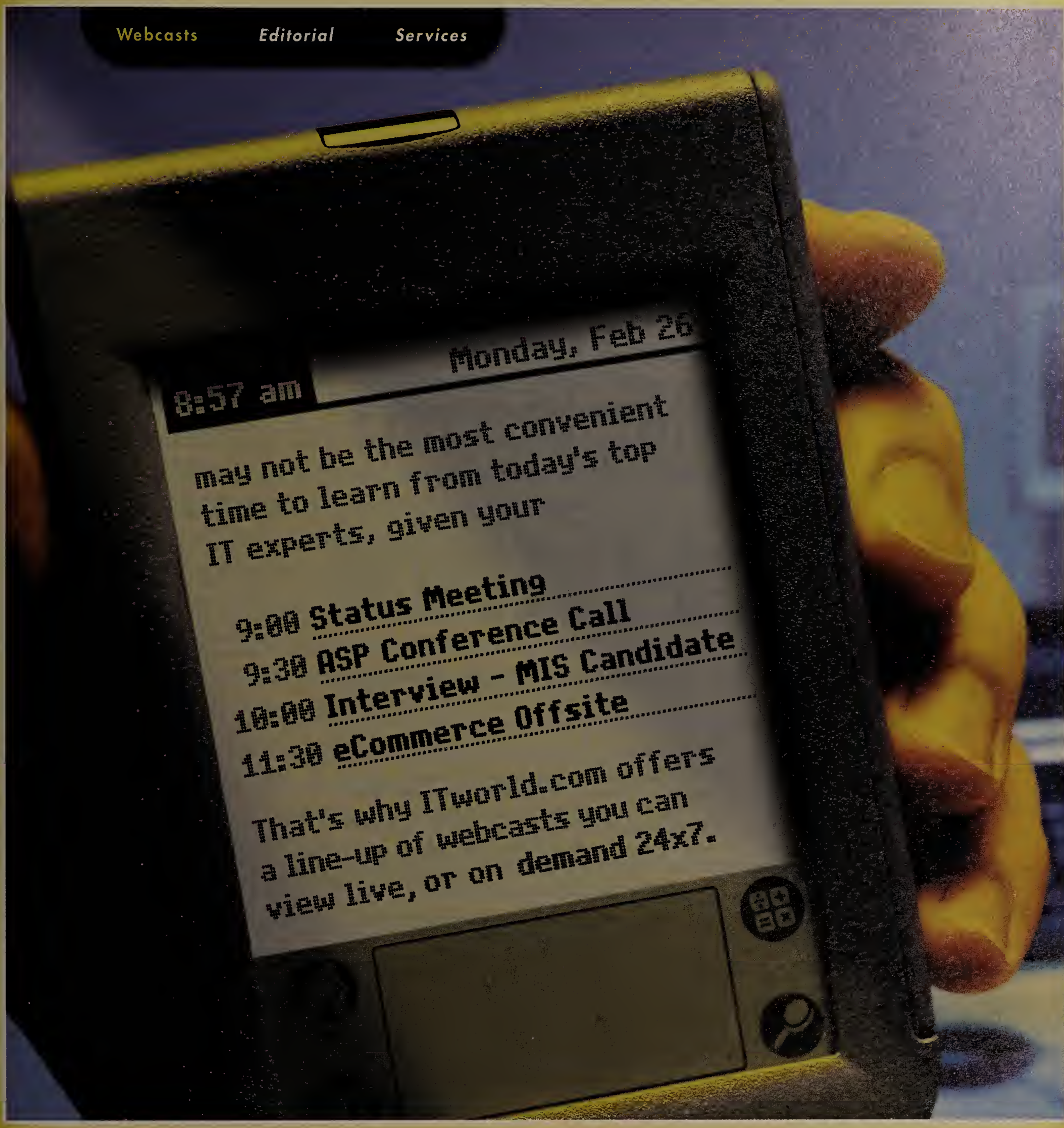
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Tester's Choice . Edwin Mier

MPLS TAKES ON SECURITY ROLE

How does a complex new Internet Engineering Task Force protocol, which was developed to deliver quality-of-service capabilities over IP networks, end up as a promising new technology for VPNs? That's the current story line for Multi-protocol Label Switching.

Companies warmly embraced VPNs as the best way to practice safe networking over the Internet. VPNs have become such a hit that users today face a half-dozen implementation alternatives. For example, VPNs can be built with stand-alone VPN controllers, via VPN software that's part of a server operating system, or via the VPN software in your routers or firewalls. You can also engage a service provider to deploy and manage your VPNs. That's happening more as word of VPN benefits spreads to midsize and smaller organizations. They want VPNs for all the same reasons as the big companies: to securely link their remote sites via the Internet and for secure remote access via the Internet.

So how does MPLS fit into all this? MPLS, a recently finalized IETF protocol, provides two pleasant and inherent by-product benefits. First, it attaches tags — or "labels" — to IP packets when they enter the MPLS-based network. This eliminates the need for each intermediate router node to delve deeply into each packet's IP header to make forwarding and handling decisions. This means packet streams can pass through an MPLS-based WAN infrastructure blindingly fast.

Second, the same labels that MPLS employs for distinguishing IP packet streams — so they can be given the appropriate class-of-service handling — also provide secure isolation of these packets from other traffic over the same physical links.

Our lab recently evaluated the security aspects of MPLS using Cisco's IOS Versions 12.0 and 12.1 across a half-dozen router platforms, from low-end 1750s to high-end 12000 GSRs. (A report detailing this testing is downloadable free from www.mier.com.)

We concluded that because the MPLS labeling hides the real IP address and other aspects of the packet stream, it provides data protection at least as secure as other Layer 2 technologies, including frame relay and ATM. Indeed, MPLS-based isolation of packet streams can be viewed as the WAN equivalent to virtual LANs — the segregation of traffic over LANs that's enabled by IEEE 802.1p and 802.1q tags.

MPLS without encryption doesn't provide the same level of security as IPSec-based VPNs using Triple-DES encryption. However, Triple-DES's added processing also has a measurable effect on the latency and throughput of traffic that's sent through encrypted VPN tunnels.

MPLS will not put IPSec-based VPNs out of business. There seems to be no technical reason why a company could not also apply IPSec-based security, including encryption, to traffic that is being handled by the service provider via MPLS-labeled VPNs. Indeed, that combination might well provide the best overall security that can be achieved for Internet-based data transmission today.

Mier is founder of Miercom in Princeton Junction, N.J. He can be reached at ed@mier.com.



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NetworkWorld REVIEW
Internet Server Appliance

Internet server appliances come of age

Sun's Cobalt Qube 3 tops our list in style and functionality.

BY JAMES GASKIN, NETWORK WORLD GLOBAL TEST ALLIANCE

The term "Internet appliance" — bandied about for years — promises easy setup and Web-based administration for performing well-defined tasks. With the exploding number of small offices and remote offices needing secure Internet services, and the continuing dearth of skilled technical support, the Internet appliance market looks good.

Can Sam the sales manager run the San Antonio branch office using an Internet server appliance? According to our tests, absolutely. Whether Sam gets help from headquarters' technical staff or from his teenaged daughter experienced in building a user Web site on AOL, an Internet appliance will give Sam all he needs for light to moderate Web, e-mail and file services.

Of the four Internet appliances we tested, Cobalt's Qube 3 offers the most administrative information, strongest fault tolerance and best Web e-mail for browser clients, along with the typical e-mail server software. Style helps too, as the cube look remains cool after three years. This combination earned Qube 3 the Network World Blue Ribbon award.

But Rebel NetWinder 3100 gets plenty of style points as well, and offers almost the same administrative depth. If your clients will benefit more from discussion forums running on the NetWinder server than from Web-based e-mail, NetWinder will serve you well. InstaGate EX2 and Celestix Aries Server Appliance work well but lack the extras mentioned for Qube 3 and NetWinder.

Toshiba's new Magnia SG10 hit the streets too late to be included in our tests, but it takes direct aim at Qube 3, with nearly identical features, disk capacity and price range. Two years ago IBM bought one of the early Internet appliance companies, Whistle InterJet, and has withdrawn the product from the market while it reconfigures the service bundle that includes the appliance as part of a long-term Internet services contract.

Sun/Cobalt Qube 3

Cobalt's Qube didn't invent the Internet server appliance niche, but it's done the most to popularize the market. The 7-by-7-by-8-inch purple cube shocked server traditionalists when the product was first shipped in early 1998. This third major revision, Qube 3, (at 8 by 8 by 7.5 inches) packs more punch and applied experience than any other current vendor. Now part of the Sun family, Cobalt also builds rack-mounted servers for ISPs and large corporations using the same desktop administration interface as Qube 3.

The high-end Qube 3 Professional Edition we tested includes a 450-MHz Intel-compatible processor, 128M bytes of RAM and two 20G-byte disk drives configured with RAID Level 1 fault tolerance. This unit supports up to 150 users and costs $2,100.

A small LCD window on the back of Qube 3 shows the unit's IP address when the machine is turned on. If there's an existing Dynamic Host Configuration Protocol (DHCP) server visible on the network, Qube 3 picks up an address and displays it. From then on, all configuration and management goes through Cobalt's outstanding Server Desktop interface. Assigning a static IP address via the Web browser takes almost no time, and once the system reboots, all communications use the new address as expected.

Web pages are most easily transferred via a Server Message Block connection from a Windows workstation. FrontPage extensions are supported, but not by default. The Server Desktop doesn't provide direct access to the Web server log files, but the statistic screens offer six different instant reports, which should satisfy most situations. On the high-end unit, a Web cache service starts automatically upon installation. If Qube 3 sits between the Internet router and the rest of the network, all clients benefit from caching automatically. Otherwise, clients must be configured with the cache address.

While every appliance offers support for multiple mail server protocols, Qube 3 is the only one we tested that offers Web e-mail, called WebMail. With any browser, clients can use the complete e-mail application that ships with the product as well as any client-based Post Office Protocol 3 or Internet Message Access Protocol client software. Remote offices can configure Qube 3 to retrieve mail from corporate e-mail servers. This feature stops remote clients from hitting the corporate servers every few minutes looking for new messages, thereby conserving precious bandwidth and reducing the load on corporate servers.

Users log on to Qube 3 for access to Web mail, and public and private address books, and to see personal information, such as addresses, contact numbers, or a personal Web page. Without supervisory help, users can manage almost everything about their accounts, including

NetResults

Cobalt Qube 3 Professional Edition

Network World Blue Ribbon Winner

SCORE: 4.15 COMPANY: Cobalt Network, (650) 623-2500, www.cobalt.com **PRICE:** $2,099 **PROS:** Dual hard drives provide fault tolerance; strong Web e-mail application; long list of reports and system information. **CONS:** Minor documentation problems.

Rebel NetWinder 3100

SCORE: 4 COMPANY: Rebel.com, (613) 788-6000, www.rebel.com **PRICE:** $1,795 **PROS:** Public and private discussion forum software included; well-designed user and administration screens; PostScript printing converter included. **CONS:** No display for initial setup help.

InstaGate EX2

SCORE: 3.65 COMPANY: eSoft, (303) 444-1600, www.esoft.com **PRICE:** $949 for 25 users **PROS:** Good front-panel LCD with comprehensive menu for setup and administration; strong, easy-to-use firewall software; good report and system information. **CONS:** Must be positioned between router and rest of network; confusing a la carte feature pricing.

Celestix Aries Server Appliance

SCORE: 3.4 COMPANY: Celestix Networks, (510) 668-0700, www.celestix.com/us/ **PRICE:** $999 **PROS:** Best LCD server control panel; wireless connections supported when using 802.11b Type II PC card modems. **CONS:** User and administration controls limited.

	Manageability 25%	Features 25%	Installation 20%	Reporting tools 20%	Documentation 10%	Total score
Qube 3	4	5	4	4	3	4.15
NetWinder	4	4	4	4	4	4.0
InstaGate EX2	4	3	3	5	3	3.65
Celestix	3	3	5	3	3	3.4

Individual category scores are based on a scale of 1 to 5. **Percentages** are the weight given each category in determining the **total score**. **Scoring key: 5:** Exceptional showing in this category. Defines the standard of excellence; **4:** Very good showing. Although there may be room for improvement, this product was much better than average; **3:** Average showing in this category. Product was neither especially good nor exceptionally bad, **2:** Below average. Lacked some features or lower performance than other products, or than was expected; **1:** Considerably subpar, or lacking features being reviewed.

changing passwords.

When companies target their products at a nontechnical buyer, the importance of good documentation rises to the top. This is one area where Sun/Cobalt didn't quite make the grade. For example, Qube 3 ships with an external SCSI connector for adding storage, but Cobalt did not provide instructions on the feature in the documentation. Also missing was an index.

There are three things that elevate Cobalt toward the top of the appliance heap: the dual drives that provide fault tolerance, the useful Web mail feature, and an automatic query service that alerts system administrators that a patch is ready to download and install.

Cobalt also offers users room to grow. The entry-level Qube 3 has a 300-MHz CPU, 32M bytes of RAM and a 10G-byte hard drive for $1,149, but Sun/Cobalt also offers higher-end features on Qube's big rack-mounted unit we tested. Anyone, including a minimally PC-abled nontechnical user, can install, configure and derive much happiness from Qube 3. If the user's requirements expand, there's an entire Cobalt family of products waiting.

Rebel NetWinder 3100

Rebel's NetWinder 3100 builds on the company's earlier OfficeServer with the unusual addition of the Transmeta Crusoe processor. The Crusoe's low power requirements pushes the NetWinder power down to five watts when asleep, with a typical rating of 14 watts when supporting a light to moderate user load and Web page traffic. The power savings isn't a huge deal today with the single-server configuration, but Rebel promises a future upgrade of its rack-mount system that runs on the new CPU. With 80 servers in a rack, all using a maximum of 19 watts, that would save a lot of power over traditional servers.

The system we tested has a 533-MHz processor, 128M bytes of RAM and a 10G-byte disk, and retails for $1,795. Rebel's top-end model includes the same processor with 256M bytes of RAM and a 20G-byte hard disk for $2,295.

Of the four appliances we tested, only the NetWinder lacks some method of displaying the IP address when it's first fired up. Using the popular local private address range of 192.168.1.0-254 (Internet routers ignore this address range), the NetWinder wakes up as IP address 192.168.1.1. Because that's commonly used for the router address on a private network, adjustments must be made quickly. We turned off the lab router before starting the NetWinder to avoid the potential conflict, but less-technical users could be surprised by the IP address conflict. The NetWinder checked around, located other DNS servers active on the network, and suggested an address for itself that didn't conflict with active network nodes.

If a system administrator gets confused, help comes with a single click. The user and administrator services pages have a help button, something Qube 3 lacks. With this single click and the help of context-specific help, a portion of the total online manual appeared in a smaller browser window.

RebelCache, NetWinder's term for the standard proxy cache service, is based on Squid caching technology. Not only do local users gain advantage of the cache from one NetWinder, but the cache hierarchy controls also let the NetWinder exchange cache information with peers or higher-level cache systems.

Three features of NetWinder deserve special mention. First, public and private discussion areas come standard with the system.

A system administrator must define or delete forums, but otherwise the discussion groups work like any other threaded discussion service. Replies can be sent via e-mail as well as on the forum. The public discussions require a logon and a few details about the end user, but private discussions accept any system-defined user.

Another handy feature, especially for paper lovers, is the inclusion of Ghostscript, a Linux printing utility. We configured an old Hewlett-Packard LaserJet IIp in the system and made it available for Macintosh clients. It worked great, as Ghostcript managed the PostScript-to-HP printer language conversion.

Third, where Qube 3 includes a SCSI connector for external drives, NetWinder lets you mount external file systems. Unix, Windows and local file systems are supported, making the disk space on NetWinder nearly unlimited.

NetWinder and Qube 3 include firewall software for security, but NetWinder offers slightly better default settings. It displays all traffic coming into and going out of the network, and it includes bold listings of what traffic is allowed.

Both manuals try to explain firewall configuration, but both also warn that settings work best when done by an experienced hand.

NetWinder ships with administrator and end-user manuals. The administrator manual sports an index but is shorter than the Qube 3 manual. The user manual explains how users handle their profiles, e-mail, connection to the discussion areas and ways to create their own Web pages.

InstaGate EX2

Unlike the other three appliances, eSoft's InstaGate EX2 must reside between the internal network where your clients are and the link to the outside, such as a router or broadband modem. The others recommend this configuration because it guarantees the appliance can work as a firewall, filter and Web cache, but they also can sit anywhere on the network like any other server. An eSoft spokesman says the ability to sit anywhere on the network, rather than only between the internal network and the Internet connection, will be added soon.

ESoft may insist on placing InstaGate EX2 between your network and the Internet partly because the product line leans heavily toward security, with its own high-end firewall and optional integration with Check Point Firewall-1 products. InstaGate EX2 supports Point-to-Point Tunneling Protocol and IP Security for VPN configuration. Certain features, such as the public Web server, SiteFilter (a URL-blocking feature and antivirus filter for e-mail attachments) and the Firewall Policy Manager must be downloaded from eSoft's Web site through its SoftPak Director feature. Not quite as automatic as Cobalt's Qube 3 automatic update, but eSoft provides a list of installed software and two-click updates (one click to download, one click to install).

Each user gets a personal Web page, and an internal Web server is included in the box. Adding the users'

How we did it

Each Internet appliance was installed on an existing small network comprising five networked PC clients, running a mixture of Windows 95, 98 and NT workstations, and a Macintosh Performa running OS 9. All the clients were connected to the server appliances through a LinkSys StackPro II 10/100 autosensing 24-port hub. A Netopia 3100R router connected the network to the Internet via a DSL link.

Initial configurations were tested, users defined, e-mail sent and received, and extra features investigated. Clients were added, testing each appliance's DHCP service to configure the client's TCP/IP software. Small production Web sites were transferred to each server to test ease of installation and use. Because these products are aimed at a less-technical audience, special attention was paid to documentation and help screens.

TOP five tips for server appliance success

1. Don't believe the plug-and-play promises — schedule a day to get everything working and everyone connected. Configuring Internet access, e-mail and file sharing on the server takes less time than configuring both on all workstations.

2. Every time you reconfigure, retest. It will save time in the end, and you'll be working sooner. The Internet appliance will start working long before all the Windows client machines are configured correctly. But until server and clients communicate correctly, work remains.

3. Make friends with a technical support person at your ISP or corporate headquarters. While you can figure out just about everything you need to know on your own, nothing saves time like experienced advice. Even with a ready contact, plan for two days of Internet connection hassles, or more if transferring an existing Web site to your new Internet appliance.

4. Don't expect the level of file and print services you get from Novell's NetWare or Microsoft's Windows 2000 using Advanced Directory. User management and file access follows the lowest-level denominator of Server Message Block popularized by Windows Network Neighborhood access rules. File control details and transaction tracking don't exist at this level.

5. Manage your expectations. Pushing an inexpensive appliance to perform like high-end clustered multiprocessor servers and support complex e-commerce transactions will lead to frustration. Internet server appliances offer great value within a well-defined niche. Stay in the appliance niche and you'll stay happy.

pages to the public Web site takes some searching because you have to locate the correct directory.

Using FTP and the directory structure won't work, since nowhere does InstaGate (or most other appliances) tell you the actual default directory for Web files. The only joy for Web developers comes in transferring files via Windows Explorer after making a connection to the server with Network Neighborhood. That's not a big deal, but it's frustrating until you figure out how file storage is set up.

InstaGate EX2 does a good job of profiling system information. The Alerts and Reports heading on the administrative browser page offers a level of detail unmatched by any other appliance. You can't get a log file dump, but you can come close. Keeping headquarters up to date requires no work whatsoever because each night you can e-mail an automated report containing many details to as many people as you wish.

Help comes from a large electronic file, sensitive to the user or administrative screen open at the time. The only other manual included contains installation information.

Users won't see any of the bells and whistles of InstaGate EX2 because they're all saved for administrators. But users will benefit, perhaps, by a more-informed administrator. For example, InstaGate EX2 is the only system that provides any type of print queue management.

Celestix Aries Server Appliance

The toaster-sized Celestix includes the best setup interface of any Internet appliance we've tested. A card-sized LCD panel contains all the configuration screens necessary to start

Why use a server appliance?

Say "server" and people generally think Compaq, Dell, IBM or Sun boxes powerful enough to run global corporations. Why would anyone replace this "big and powerful" hardware with "small and cute" servers?

First, examine the cost of servers needed for various purposes. Large companies need plenty of server horsepower to support thousands of internal employees and potentially millions of daily visitors over the Internet. Statistically, however, most companies average hundreds or thousands of Web hits per day, compared with the few companies handling millions of hits per hour. Why pay for millions of hits when you only dream of thousands?

Second, small companies or remote offices with two dozen or fewer employees don't place a high demand on their servers. The Cahners In-Stat Group reported earlier this year that U.S. businesses support more than two million remote branch offices. Heavy-duty server clusters that make sense for headquarters don't make sense for a remote sales office.

Price goes far beyond hardware, however. Server software optimized for small businesses can equal or exceed hardware costs.

For example, Novell's Small Business Suite 5.1 costs $2,695 for 25 users, while the Microsoft Small Business Server 2000 totals $2,498 for 25 users, with no hardware included. All the server appliances we reviewed include the critical server functions (Web, e-mail, FTP, file and print) as well as VPN and remote user support. Novell throws in fax software, virus control and client management software, while Microsoft adds fax software and Web site creation tools (FrontPage 2000). So while it may be argued that Novell and Microsoft offer more features, the server appliances include all the really necessary software bundled with essentially free hardware. Or, if you prefer, they sell the hardware with free software.

Third, high power still means high complexity. Technical expertise gravitates toward high dollars and away from small companies. Small companies struggle to get technical support and demand easier-to-use systems. Even large companies with adequate technical support face a personnel crunch servicing remote offices. The average enterprise customer supports nearly 100 remote offices, making adequate physical technical support almost impossible.

Hardware and software bundling in server appliances help small businesses get needed services conveniently and inexpensively. Each server appliance reviewed here used some version of Linux, reducing the software cost considerably, although each provided its own administration software at some development cost. Other companies in the Linux space now target customers with customized software, letting customers "just add hardware" to make their own server appliance.

Putting together the correct Linux-approved hardware with correct drivers on standard PC-based servers takes experience. Configuring the software services needed, such as Web, e-mail and FTP servers, takes more Linux experience.

Trading hardware expansion capabilities for properly matched hardware and software and preconfigured services makes sense for many companies. These companies are the target market for server appliances.

Finally, server appliances require much less power than traditional servers. While a desktop PC requires about 200 watts, servers typically require a minimum of 300 watts. But even the most power-hungry appliances have a maximum electrical requirement of 60 watts.

Although the common feature list for these server appliances is long (see graphic), each server remains a distinct unit and retains its own personality. Hiding the Linux operating system from users forces each vendor to walk the tightrope between too technical and too simplistic. Each server includes telnet software for command line operation.

At least two companies have taken the approach of providing customized Linux server software that can turn an existing low-end PC into an appliance. NetMAX Professional Suite includes all the features listed for the Internet appliance (except the appliance hardware) for $550 or less, depending on software modules ordered. E-smith Server has partnered with Gateway to offer appliance software on a yearly subscription basis ($600), including technical support.

Don't assume "small and cute" servers can't handle a reasonable workload. The Celestix unit, for example, powered by only a 200-MHz MediaGMX processor and 64M bytes of RAM, claims support for up to one million Web page requests and 400,000 e-mails per day. The Rebel NetWinder promises to serve up to 450 Web page requests per second (more than 38 million per 24 hours), and Cobalt's Qube 3 also offers up to 35 million Web objects per day.

But beyond cost vs. value and other rational reasons, these servers are small and cute, nonthreatening in a world full of often-menacing technology. Server appliances are optimized for a small range of jobs, and they perform these jobs quite well.

Today, when general-purpose networks boast a dozen monster quad-servers in a rack-mounted cluster weighing a thousand pounds, small and targeted appliances offer an elegant alternative in the right situation.

— James Gaskin

Appliances include the following services:

- Shared Internet access, sometimes through integrated DSL modem.
- Linux operating system (well-hidden).
- Web server (Apache) for administration and public/private Web sites.
- Web caching service.
- E-mail server (POP3, IMAP and SMTP).
- FTP server
- File server for Windows, Mac and Unix clients.
- Print server
- DNS server
- DHCP server to automatically configure clients for proper server and Internet access.
- Basic firewall security.
- Network address translation to hide internal network addresses from the Internet.
- VPN support to securely connect private networks across the Internet.
- Remote user authentication and connection support.

Celestix on the road to controlling your network.

Large enough to display four lines of text with navigation arrows and headings above and below, the Celestix LCD screen controls each critical start-up setting. Like NetWinder, Celestix starts with an IP address of 192.168.1.1, but informs you in bright pixels on the front of the machine, and offers an easy way to change that address. The IP addresses for primary and secondary Ethernet ports can be set through the LCD screen, you can enable the DHCP server here, and most other services can be started or stopped from the front panel. The four surrounding navigation keys provide an easy trip through what could become a menu maze, but it's laid out well enough that everything works.

While Qube 3 may be slightly administration-heavy, the Celestix appliance follows the "no news is good news" mantra. Too little information is shown, and no system information screens can be found. Only the most rudimentary file controls are provided (making files Read-Only or restrict access, for example). The user control screens don't offer ways to restrict user access to parts of the server hard drive. Unlike other systems, users can't be gathered into groups for easier management.

A basic firewall comes standard, but it's far more limited than the other firewalls in the range of traffic controlled and management. Proxy caching support must come from an ISP; the Celestix appliance doesn't directly provide caching for clients. Basic e-mail comes with the package, although Web client e-mail activity reports aren't included.

As the least expensive system ($1,000), Celestix offers some of the most advanced connection features. Its front sports an infrared port underneath the LCD panel, includes two PCMCIA slots, and ships with drivers for 802.11 wireless devices that plug into PC Card slots. The feature list doesn't include anything beyond the basics, but the basics work as advertised.

As Internet servers and services become as mandatory for small companies as they have for large corporations, the server appliance market will explode. This much power and control never came in such a stylish or user-friendly package before. For small and midsize companies, and corporate departments that need servers, these appliances do a great job hitting that 80/20 mark: 20% of the cost and complexity gives you 80% of all the features you need.

Gaskin is a freelance writer and author of Mastering NetWare 5.1. *He can be reached at james@gaskin.com.*



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Management Strategies

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Ready, set, change

IT executives say communication is key to successful change management.

BY LISA KOSAN

Jeff Civitarese's colleagues used to call or e-mail him whenever they needed a new version of QuarkXPress, a CD burner or some other cool new gadget. Times have changed.

Now employees at HCPro, a healthcare publishing company in Marblehead, Mass., fill out an IS requisition form Civitarese developed to log the requests and document all the necessary approvals. The change was small, not like the company's migration from a modem pool to DSL, or implementation of an enterprise back-up system. But a few people grumbled as they confronted a new way of doing things.

Ultimately, the change went through fairly easily, says Civitarese, who until recently worked as HCPro's IT project manager and is now completing his MBA. "I think people reeognized there was a need for more order," he says.

Change in the workplace ranges from the mundane (new passwords or requisition forms) to the grand (network reconfiguration or company acquisition). As businesses struggle for improved profits and a competitive edge, IT staffs are increasingly charged with making technology better and faster overnight.

But change and techies don't always make a good marriage. Civitarese says he's comfortable with change, probably because he took plenty of orders during an earlier career with the U.S. Army. But others resist all requests to budge.

Paul Lucking says the IS ranks are filled with cowboys and "please leave me alone" types. The latter group includes talented network administrators and engineers who work hard to be experts and are comfortable with what they know. "Their human nature takes over and they resist change," says Lucking, CEO of IT consultancy Interface Communications and COO of Davel Communications, a pay phone services firm in Tampa, Fla.

That kind of resistance could have threatened the growth of ADT Security Services of Boca Raton, Fla. When ADT was purchased by Tyco International in 1998, the IT staff felt the brunt of the merger of two disparate companies. "We were issuing change orders to these guys almost every day," says Michael Snyder, president of ADT Security Services/Tyco. "They're dealing with a task that requires a lot of concentration and effort. Then you tell them what they've been doing for whatever period of time is not getting us in the right direction and they've got to change. They get defensive."

So Snyder and other members of ADT's executive team made sure they explained exactly what would happen and why. Snyder briefed groups of employees around the country every day for six months, usually two or three times a day. The tech staff took some extra effort. "We had to really overcommunicate to those people so they understood every aspect of the company and where it was headed," Snyder says.

Civitarese agrees that success hinges on how well employees are informed. "A lot of times people aren't told how the change will affect their jobs or how it relates to organizational goals," he says. The stakes are higher when technology middle managers — who often don't have the best "people skills" — have to enlist their staffs in the effort. And if they can't get everyone on board, the project is likely to be hijacked.

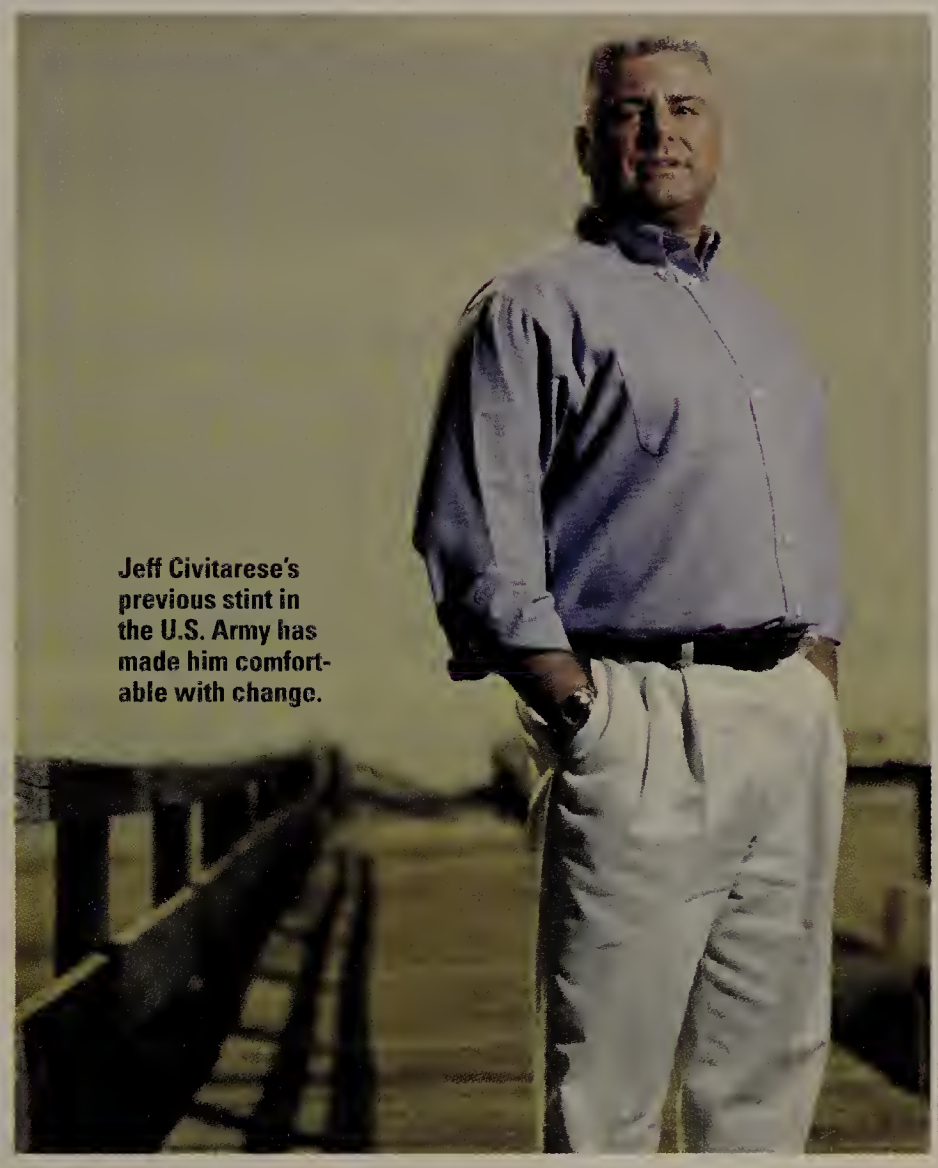
Successfully implementing change is a multistep process. First, convince people of the need to change, or show that a crisis exists. Tell them the benefits. Develop a plan for change, then communicate it effectively. Manage resistance to change before and during the transition. Evaluate the process and share results with employees.

Effective "change management" also means convincing people that change is part of the company's fabric. That starts with identifying what Charles Bishop calls an employee's "personal change capacity." Managers need to talk to colleagues and supervisors to assemble a portrait of how capable someone is of change. The picture should include strengths, weaknesses and a track record of someone's response to change, says Bishop, president of Chicago Change Partners, a consulting firm in Northbrook, Ill., and author of *Making Change Happen One Person at a Time*.

People who put the brakes on any attempt to change should be coached a few times. If they don't see the light, remove them. Bishop says sometimes people resist change simply because they don't like the way they're told, or don't understand why they need to change.

Lucking believes the more employees are included in a discussion that makes them understand why they have to change, the more receptive they will be. "Keep me in the dark," he says, "and my natural instinct is to try to preserve the world that I know."

Kosan is a freelance writer and editor in Beverly, Mass. She can be reached at lkosan@mediaone.net.



Jeff Civitarese's previous stint in the U.S. Army has made him comfortable with change.

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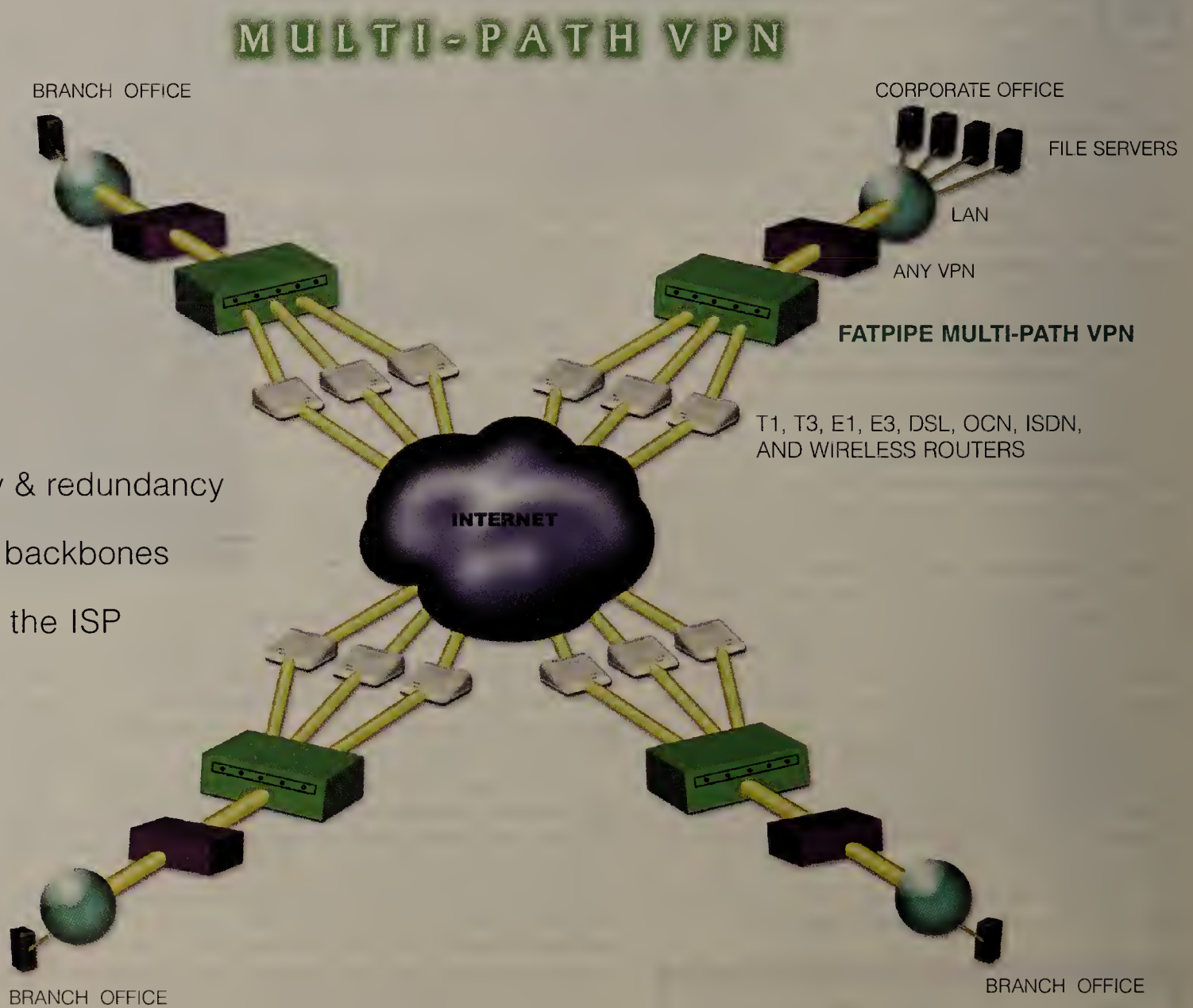
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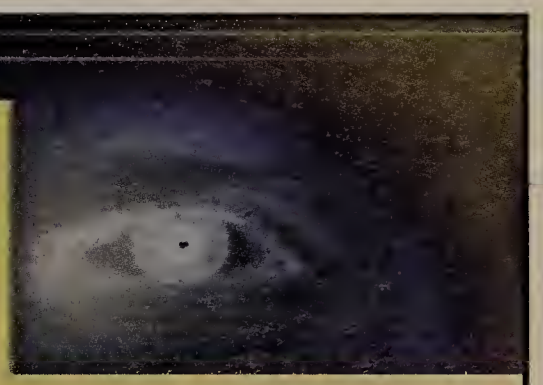
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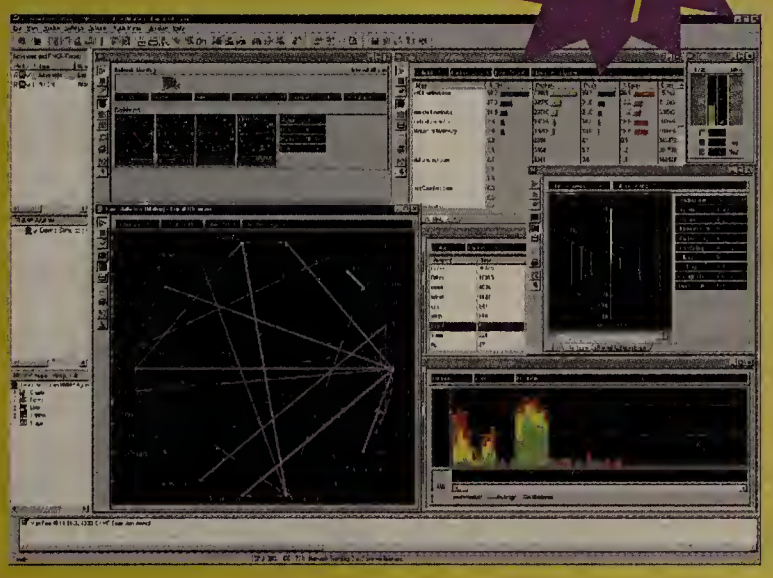


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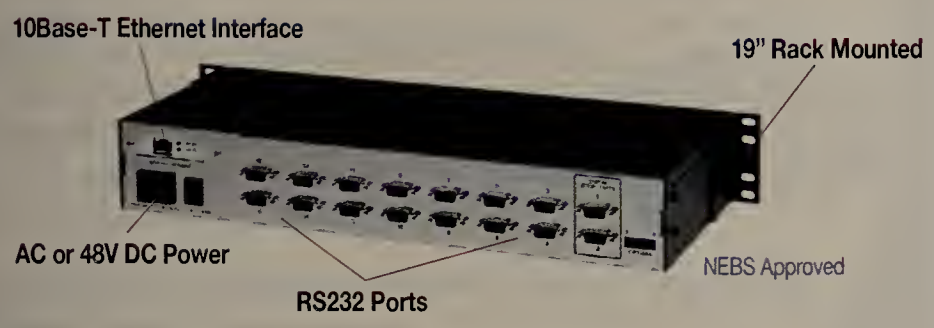
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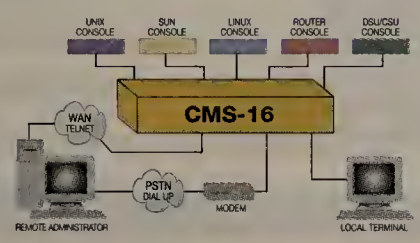
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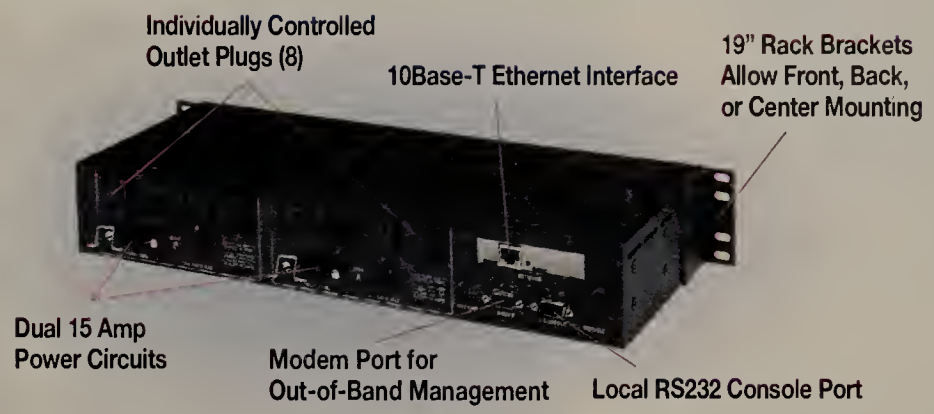
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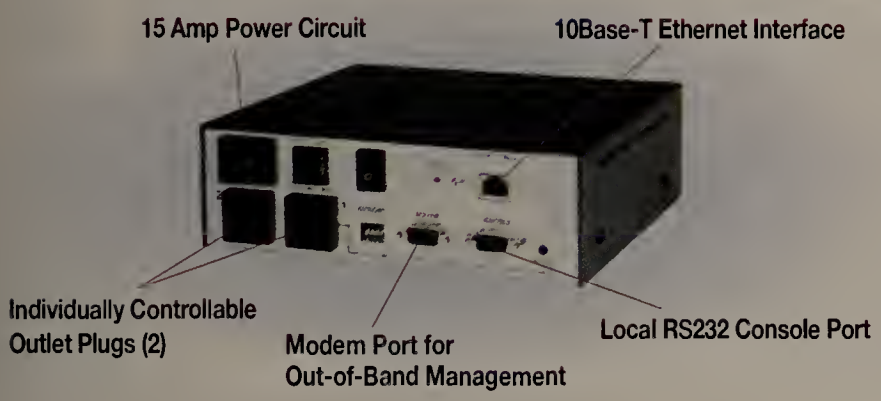


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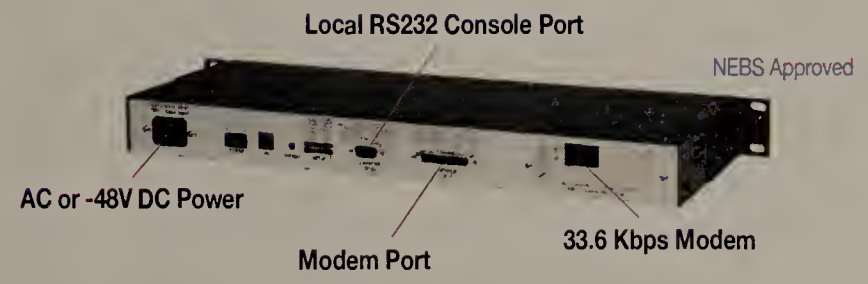


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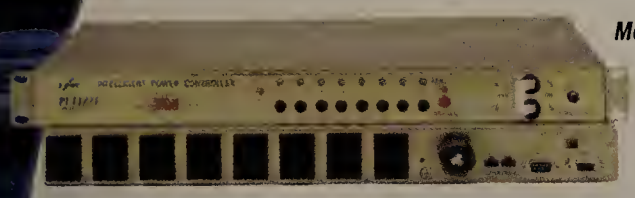


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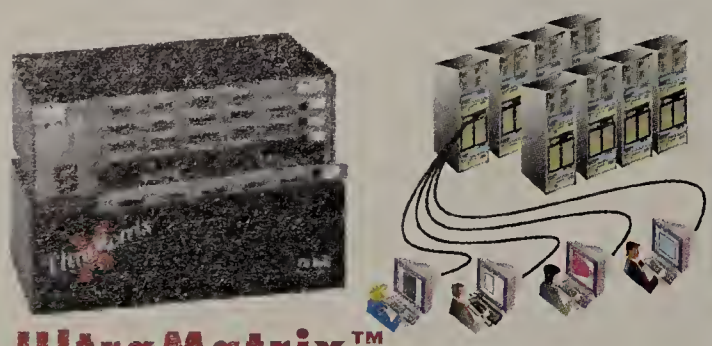
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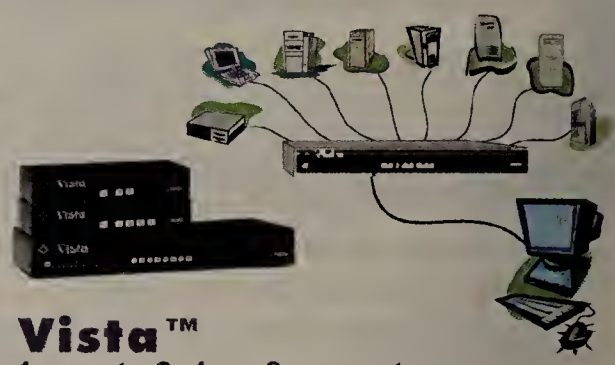
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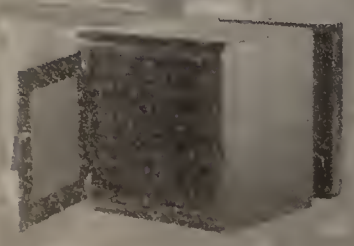
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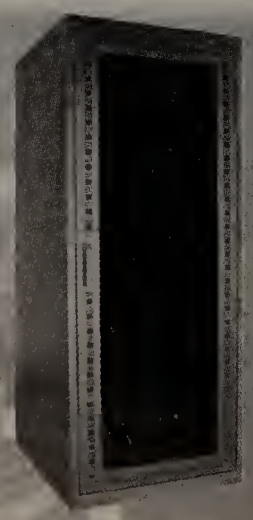
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Systems 390 Computer Specialist/Professional Lecturer

Marist College seeks to hire a Systems 390 Computer Specialist/Professional Lecturer to work on IBM-Marist Joint Study projects and teach in the Computer Science program. This will be a joint appointment between the School of Computer Science and Mathematics, and the Department of Information Technology (IT). The Department of Computer Science offers bachelor degrees in Computer Science, Information Systems, and Information Technology, and master degrees in Software Development and Information Systems. The appointee will teach two courses each semester. The successful candidate will have at least a Master's degree in Computer Science or related areas and have the ability to teach at College/University level. Teaching excellence is one of the distinguishing characteristics of Marist College, which is a leader among small liberal arts colleges in integrating technology into teaching and learning.

The Marist College technology infrastructure has been developed through a joint study with the IBM Corporation. Currently the College is in the second phase of the joint study. Research is being conducted in the areas of streaming media, virtual servers, and System 390 applications. Marist has also established a major Linux Research and Development Center and is in the process of establishing a special training program in an S390 environment. Marist is also leading major efforts to educate professionals with on-line courses such as Linux, Java, web programming, and distributed systems.

This position requires a solid work experience/background in S/390 Systems: VM, and Linux/UNIX, including a basic understanding of LAN/WAN Networking and topology. Knowledge of Linux system administration, OS/390, and Linux for S/390 will be very helpful. This individual will be an active participant in the joint study team and also be responsible for the creation and implementation of Distance Learning courses (including learning outcomes), and training programs in Systems 390 and Linux. Position requires analytical ability and creativity in using existing teaching techniques/experience to analyze and implement distance-learning web-based courses.

Marist College is located on the scenic Hudson River and 90 minutes away from New York City. It enrolls approximately 3,600 full-time and SS0 part-time undergraduates and 600 graduate students.

Review of resumes will begin Moy 25, 2001 ond will continue until the position is filled. A letter of opplicotion olong with o curriculum vito ond the nomes of three professionol references should be oddressed to:

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Project Manager (Software Engineer)

International Telecommunications Software company has an opening for a Project Manager (Software Engineer) to coordinate and supervise development, implementation and integration of company's proprietary software with client networking and communications systems. Must have experience using C++, Java and NT. If interested, forward resume to: Maura Rodenhiser, HR Manager, Elron Telesoft, Inc., 7 New England Executive Park, 10th Floor, Burlington, MA 01803 or e-mail to petes@elrontelesoft.com

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Software Technical Services, Inc, Alpharetta, GA has immediate multiple openings for exp'ed Prog/Sys/Analysts, S/W Engineers, DBAs in the following areas: AS/400, Mainframes, COBOL, Oracle, Oracle Financials, Visual Basic, Visual C++, Sybase, Java, HTML, PERL CGI, web technologies, PeopleSoft, SAP etc. Some positions require MS or equiv. in Engg/ Comp Sci/Bus Adm./Math and some require BS or equiv. in any of the above. Salary commensurate with experience. Foreign equiv. of education and / or combination of exp and edu will be accepted. Travel/relocation required. Resumes to. HR Dept, 105 Nobel Ct, Windward Business Ctr N, Alpharetta, GA 30005.

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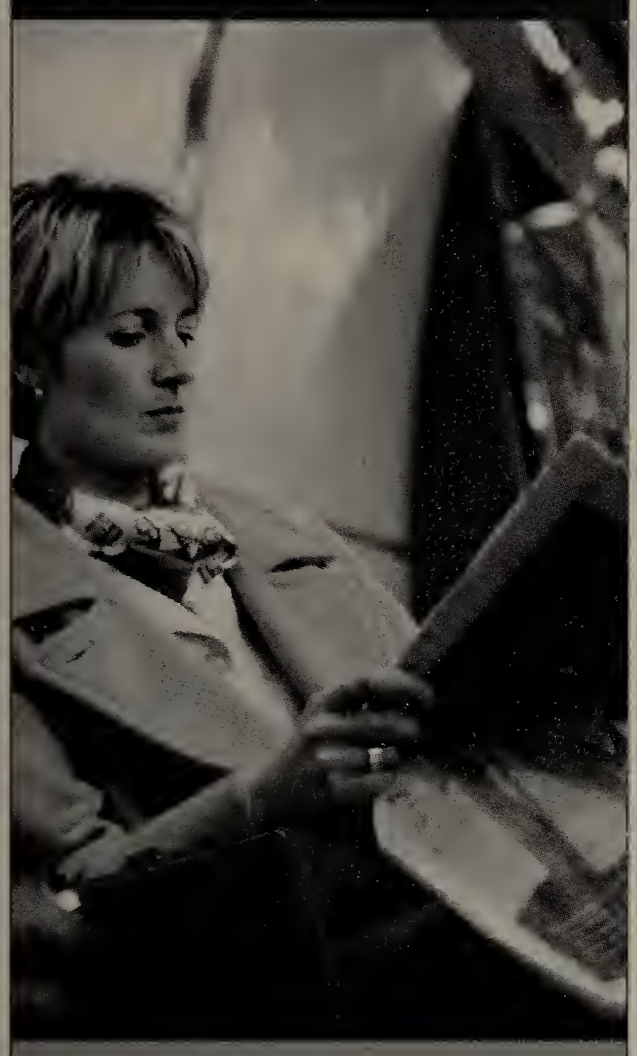
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Yield Dynamics, Inc. is looking for Software Engineer for its office in Santa Clara, CA. Position requires MS or foreign equiv in CS, Eng or related field & 2 yr exp researching, dsgng & dvlpg comp s/ware. Skills sought include: C++ and SOL.

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Technical Consultant sought by company specializing in business software solutions in Denver, CO to work in Denver & other unanticipated job sites in the US. Under close supervision, engage in moderately complex tasks regarding the support of company software applications. Specifically, provide technical support & assistance to clients throughout the United States on a broad range of issues with respect to sophisticated software applications in such areas as installation/set–up, systems administration, product configuration,& functionality. Design, develop,& implement modifications & enhancements. Document recurring problems or issues,& recommend new directions & features to applications development team. Work is closely monitored. Engage in application development as required. Requires Bachelor's in comp. sci., electrical eng. tech. or related field; working knowledge of software installation & troubleshooting. 8am-5pm, M-F; $51,600/yr. (2 opgs.) Respond by resume to James Shimada, Colorado Department of Labor & Employment, Employment & Training Division, Tower II,#400, 1515 Arapahoe, Denver, CO 80202, & refer to Job Order Number JL1118761.

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IT Hot Skills: UNIX



The universal language of UNIX continues to create opportunities for new technologies, new forms of communication – and new careers.

Bill Washington, president of **Open Systems Technology Institute (OS Tech)**, says his company hires individuals for several different aspects of the UNIX market. "We're a computer training company, and from that grew into staffing. So we train UNIX and need instructors. We also need supply system administrators and programmers for our clients, most of whom are Fortune 500 companies. What our clients need and want are people who can take UNIX and configure the server for installation, who can configure the network, install on PCs and integrate other capabilities. This is beyond certification, and that's what we provide through our training and through our staffing."

OS Tech hires full-time employees and contractual employees to place with customers. "Our customers tend toward six-month to two-year contracts and most have a stipulation for the right to hire. However, you may be assigned to a customer for a specific project, rotate back here to train or to take additional courses yourself, and then move back out to a client again."

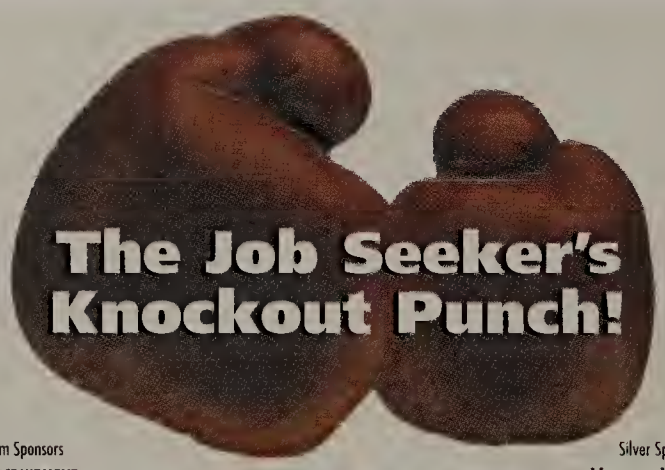
Washington says **OS Tech** looks for strong communication and technical skills, plus experience. "We maintain a bank of resumes and then screen candidates against what our customers need to make sure they can handle the job, that they have the expertise and that they have the interpersonal skills to fit within that given environment.

"Our value to our customers, however, began with training, and that's what we can offer employees," Washington says. "We just had someone with AS400 skills return to our bench from an assignment. She knows Cisco is hot and is going to our Cisco academy, which will open still more opportunities for her."

IT careers

For more job opportunities with firms using UNIX, turn to the pages of ITcareers.

- **If you'd like to take part in an upcoming ITcareers feature, contact Janis Crowley, 650.312.0607 or janis_crowley@itcareers.net.**
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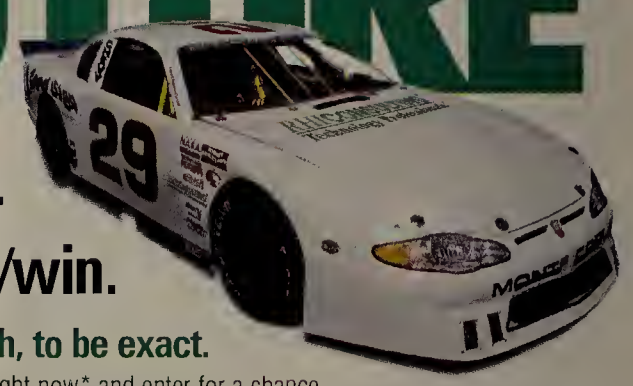
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118 Turnpike Road, Southborough, MA 01772
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TO SEND E-MAIL TO NWW STAFF
firstname_lastname@nww.com

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Debbie Lovell, National Sales Operations Manager
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(508) 460-3333/FAX: (508) 460-1237

NEW YORK/NEW JERSEY
Tom Davis, Associate Publisher, Eastern Region
Elisa Della Rocco, Senior District Manager
Terry Sanders, Account Executive
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Internet: tdavis, elisas, tsanders, ajacobs@nww.com
(201) 587-0090/FAX: (201) 712-9786

NORTHEAST
Donna Pomponi, Regional Sales Manager
Kathryn Zinn, District Manager
John Mahoney, Account Executive
Caitlin Horgan, Sales Assistant
Internet: dpomponi, kzinn, jmahoney, chorgan@nww.com
(508) 460-3333/FAX: (508) 460-1237

MID-ATLANTIC
Jacqui DiBianca, Regional Sales Manager
Internet: jdibian@nww.com
(610) 971-1530/FAX: (610) 975-0837

MIDWEST/MARYLAND
Eric Danetz, Senior District Manager
Aimee Jacobs, Sales Assistant
Internet: edanetz, ajacobs@nww.com
(201) 587-0090/FAX: (201) 712-9786

CENTRAL
Dan Gentile, Midwest Regional Director
Gracie Vela, Sales Assistant
Internet: dgentile, gvela@nww.com
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Internet: skupiec, mdennison, lgreenberg, sweglage, cbaglione, lluk, gturner, apike@nww.com
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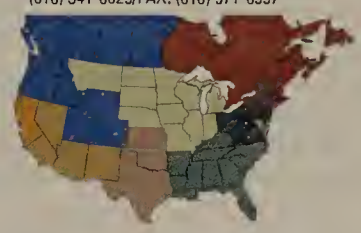
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Carol Stiglic, Regional Sales Manager
Karen Weiss, Rtbarnes, egional Sales Manager
Internet: cstiglic, kweiss@nww.com
(650) 577-2700/FAX: (650) 341-6183

SOUTHWEST
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Angela Perna, Sales Assistant
Internet: brandell, aperna@nww.com
(949) 250-3006/FAX: (949) 833-2857

SOUTHEAST
Don Seay, Regional Sales Manager
David Mooney, Sales Assistant
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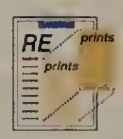
CUSTOM PUBLISHING
Shaun Budka, Custom Media Solutions Manager
Internet: sbudka@nww.com
(508) 460-3333/FAX: (508) 460-1237

FUSION
James Kalbach, Sales Manager
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Microsoft-DOJ case: Three years and counting

BY MATT BERGER

WASHINGTON, D.C. — Three years of legal maneuvering, two attorneys general and one bruised computer industry later, the U.S. Department of Justice and 19 states remain pitted against software behemoth Microsoft in a high-stakes antitrust battle.

Last Friday marked the third anniversary that the software maker from Redmond, Wash., officially became the defendant in what has turned into one of the most important cases in the history of U.S. antitrust law. On May 18, 1998, after four years of prior courtroom activity and six more of behind-the-scenes government inquiry, a legal team headed by then-U.S. Assistant Attorney Joel Klein filed a 53-page document with a U.S. District Court alleging that the world's largest software maker was in violation of antitrust laws.

After a year of trial court hearings, District Court Judge Thomas Penfield Jackson delivered a verdict that essentially bought wholesale the government's charges that Microsoft used a monopoly in the PC operating systems market to illegally quash competition. But Jackson's decision only set off more legal noise in the industry, including Microsoft's appeal in the U.S. Court of Appeals in the District of Columbia, which is set to decide on the case any day now.



AP PHOTO

Judge Jackson essentially bought wholesale the government's charges that Microsoft used monopoly power to illegally quash competition.

It has also set a new precedent for the concept of judicial time, legal experts say.

"As large U.S. monopolization cases go, this case is moving very quickly," says Bill Kovacic, a law professor at George Washington University law school in Washington, D.C. "To a layperson it may seem like the progress of a glacier, but in antitrust terms this is the speed of light."

Compared to previous antitrust cases against such technology heavyweights as IBM and AT&T, which lasted as long as 12 years, Microsoft's case has been a short one.

While the federal case against Microsoft has been swift legally speaking, it has seemed like eons for the software industry. As lawyers duke it out with rhetoric, new products — and, according to critics, the same old tough-as-nails business strategies — continue to emanate from Redmond. Microsoft's .Net initiative, Xbox video game console, wireless and mobile devices, and new version upgrades to Windows and the Office desktop software suite all continue to make headlines.

"Microsoft has to continue to innovate and develop new products or some other competitor will take our place," says Jim Cullinan, a Microsoft spokesman.

Three years after the government filed its charges, the Justice Department continues to argue that PC manufacturers had "no commercially reasonable alternative to Microsoft's operating systems for the PCs that they distribute." Proponents, including Microsoft, argue that a "commercially reasonable alternative" exists today in a number of competitors, from Java to open-source operating system underdog Linux.

Lately, it has been difficult to see that argument through because even though alternative technologies such as Linux pose a threat to the huge Windows-related software portfolio, unsettling financial markets have dampened the momentum of many Microsoft competitors.

Critics contend that after three years under the microscope of U.S. law, Microsoft still controls not only 90% of the world's desktops but is working to extend its reach into other markets, from enterprise software to telecommunications and even television. With Microsoft making inroads beyond the coveted desktop PC and getting a more diversified grip on the technology market, concerns that the result of the antitrust case will have little effect on the industry are becoming more acute.

"The Justice Department's antitrust case seems to be dying a death of a thousand cuts," says Charles King, a senior industry analyst with Zona Research. "If it ever does get to the Supreme Court, I wouldn't expect any serious repercussions to come of it."

Microsoft shares a similar view. The company continues to bundle more of its applications, such as its Windows Media Player, into new versions of its operating system, irking many critics who say Microsoft is engaging in anticompetitive behavior more than ever. Similarly, as it unveils more news about the .Net Web services platform, Microsoft looks like it may manage to latch onto yet another shift in the computing industry, toward software systems distributed across the Internet.

Berger is a correspondent with the IDG News Service in San Francisco.

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also restructuring and stopped using Volera's products.

- Excelerator 2.0, which supports streaming media, was announced in February but reports from testers indicate it suffers from serious bugs.

In light of the partner defections, Volera is attempting to sell Excelerator directly to enterprise companies and service providers, and is thus competing with its remaining OEM partners.

"It is dealing a death blow to its partners," says one source, who declined to be identified.

Volera President Simon Khalaf acknowledges that changes to the company's sales model are under way.

"Our demand is shifting from the [competitive local exchange carriers] and [incumbent local exchange carriers] to backbone providers on one end and enterprise customers on the other," he says. "We need to meet the needs of those customers directly."

Khalaf says the caching industry is evolving away from the appliance model that Volera initially embraced.

"When users want to run a different application on the appliance, they have to buy a new appliance," he says.

As a result, Volera is working on new agreements with Dell and Compaq to make "soft appliances" based on their PowerEdge and ProLiant servers, where a customer can add RAM or a disk to the server if it wants to, Khalaf says. In April, Volera announced a deal with Compaq to market Excelerator on Compaq's ProLiant servers. It will announce an expanded agreement next month, he says.

One industry expert believes the company has no choice but to offer products directly to corporations.

"One of the failings of Novell's strategy [for Volera] was to assume that even partners as big as Dell or Compaq could do the market development and selling for them," says Peter Christy, an analyst with Jupiter Media Metrix. "It was a mistake Volera is rectifying."

Volera's problems began to come to a head when the company released the Excelerator 2.0 beta version to OEMs and dramatically increased the price of its license, which had caused some of those vendors to begin looking for other caching partners, sources say.

While Volera customers give its products generally high grades, they report rough patches, too.

"I have had mixed results with [Excelerator running on the Compaq TaskSmart caching appliance]," says Steve Scarbrough, an IT staff member with the Storm Lake, Iowa, school district. "[Excelerator] has not been entirely stable when used with filtering, nor has Compaq been entirely helpful in updating it during the Novell-to-Volera spinoff."

Scarbrough has been using Excelerator Version 1.3c and says it took him six months to get the software working.

Observers say the Volera spinoff came too late in a market that was beginning to slide to offer much of a boost to Novell.

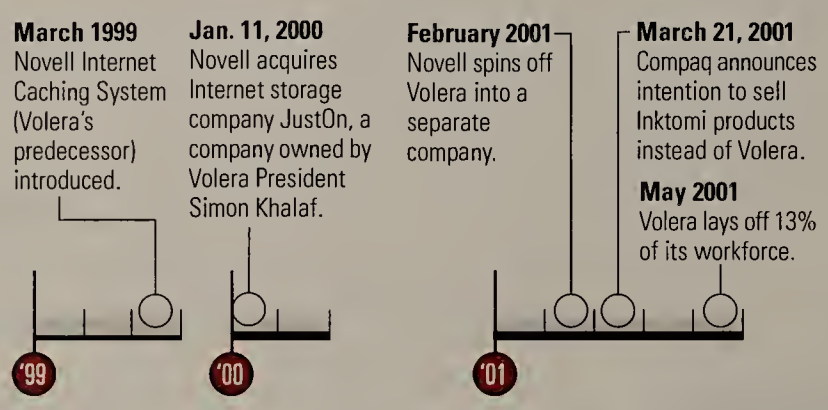
"If Novell had gotten Volera out there faster, the company could have taken over the market and capitalized on it," says a former Novell employee who was involved in the spinoff planning.

Three other companies in the caching arena, CacheFlow, Inktomi and InfoLibria, sustained layoffs and reported lower than expected earnings this spring.

Volera's resources are also apparently strained porting its caching software to the Linux platform and working to meet its agreement with Nortel. The latter company is working with Volera to jointly develop and tightly integrate Volera's system and content management capabilities into its new Alteon Content Distribution Manager and its Personal Content Cache to give service providers increased control over their infrastructures and content delivery services. ◪

Volera's volatile tenure

Here's a recap of the brief history of Novell's caching spinoff:



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Students and faculty at some of these institutions can experience benefits such as on-demand video learning and personal messaging applications that put a dorm-room answering machine to shame. Other schools are using Internet-based voice and video technology to let scholars communicate while saving money on long-distance telephone and videoconferencing charges.

"Our students are using tools that many businesses don't even have today," says Karen Thornton, director of the Hinman CEOs program at the University of Maryland. "They're becoming early adapters of state-of-the-art equipment and that in itself creates a different kind of student."

Universities have been the incubators for innumerable technologies that are now common to companies — Unix and Linux, the router, the Web browser, and, of course, the Internet. Now colleges are rolling out sophisticated IP communications and multimedia services that would make many Fortune 500 companies envious.

While it's not uncommon for college students to blow off the occasional class, students at California State University, Monterey Bay (CSUMB) who play hooky can access a digital video archive of a missed lecture or lab by logging on to the school's MediaVision streaming media system.

With one terabyte of archived multimedia content, CSUMB has the largest repository of digitized educational video content in the state, according to Lev Gonick, CTO at CSUMB.

At the heart of the system is an enormous 32-processor Silicon Graphics Origin 2100 streaming media server running Kasenna Media Base software, which is an on-demand video application for organizing and delivering content.

Gonick says digital media is recorded in six different formats — MPEG 1, 2 and 4; Quicktime; RealPlayer; and Windows Media Player — letting students choose a format suitable for their connection, "whether it's a remote student using a dial-up connection, wireless Ethernet users or switched Ethernet."

Gonick has also extended the video system to run over the school's wireless LAN infrastructure, which is built on Compaq WL wireless LAN endstations throughout the campus. Students use Compaq wireless PC cards on their laptops to access 1.5M bit/sec 802.11b Ethernet.

"Students can be sitting outside with a laptop and get full-motion, 30 frame/sec video," Gonick says, although this kind of access tends to bog down if more than 12 students are accessing wireless streaming video over one endstation.

"The 'Net as a learning tool has been singularly disappointing in my view, because it's been largely all about text. . . . That's really boring for a generation of students that's grown up on MTV," he says.

CSUMB's network backbone consists of a dozen Alcatel 5052 switch routers that keep the megabits of educational video traffic flowing around the campus, Gonick says. With input from administrators and faculty members from many departments, Gonick has used the backbone Alcatel switches to enforce network policies that give the right amount of bandwidth to certain applications, such as streaming video.

Quality of service (QoS) is even applied to different kinds of videostreams, based on the content-priority policies devised by Gonick and school administrators.

Streams of campus events, such as an address from the school's president, or distance-learning content for a large audience, could get more bandwidth than video content from other classes that only a few off-campus students may access, such as a movie or an archived lecture on video.

At the University of Maryland, the Hinman CEOs curriculum is a joint program run by the school's business and engineering schools, with the aim of creating tomorrow's high-tech entrepreneurs. The program was started in part by Brian Hinman, a UM alumnus who is not unfamiliar with IP multimedia technology — he was a co-founder of PictureTel and later went on to found Polycom.

Students in the program live in Garrett Hall, known as the "eDorm." This residence hosts a converged wired and wireless infrastructure with unified messaging applications from Avaya and PictureTel available to residents.

The eDorm's converged network runs on a rack of Avaya Cajun P550 switches in the building's basement linked via Fast Ethernet connections to dorm rooms.

The switches also provide QoS by reordering voice and data packets according to 802.1p priority bit levels (voice and video are tagged as "highest priority"). The Cajun switches connect to the campus backbone over a fiber-optic Gigabit Ethernet link.

The eDorm is hooked up with Avaya's WaveLAN wireless LAN endstations, which lets students access the campus net from any room or hall in the dorm. Students in the program are also given access to unified messaging technology from Avaya through Definity IP Softphones installed on their PCs.

While the dorm's network plumbing is probably more state-of-the-art than many companies, it's the applications that give Hinman students the extra edge as they attempt to start their own businesses, program director Thornton says.

"Students can be at home on spring break, skiing in Vermont or at friend's house, and they can check their voice mail for their business," Thornton says.

Avaya's Intuity multimedia messaging software lets students download voice mail messages as WAV files from a secure Web site on the company's Avaya ECLIPS IP 600 communications server.

Desktops in the eDorm are outfitted with loads of IP multimedia gear.

Hinman students' PCs are installed with videoconferencing software and cameras for their PCs that let them conduct face-to-face meetings over the Internet with potential business partners or venture capital firms interested in a student's idea.

PCs are also loaded with Avaya's unified messaging software. In the dorms, three conference rooms are equipped with Avaya Viewstation videoconferencing endpoints, which allow for larger groups in a videoconference.

When the Hinman CEOs program is moved to its permanent home next January, each dorm room will be outfitted with an Avaya Definity IP phone, making the entire dorm a converged network with no plain old tele-

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High-tech education

A sampling of technologies that are in use on some advanced universities' networks:

Unified messaging	Integrates voice mail, e-mail and fax messages into a single user interface. This allows users to listen to voice mail on a PC as WAV files or read a fax as a digital image, along with regular e-mail.
Wireless IP video	A combination of 802.11b Ethernet and highly compressed MPEG-4 technology that allows video content to be accessed over a wireless IP LAN.
H.323 audio/video	An ITU standard for real-time voice- and videoconferencing-over-IP networks. Standardization on the protocol allows IP voice/video gatekeepers on separate university networks around the world to be managed and accessed as easily as a phone directory.



The Scoop

The news behind the news

SAY GOODBYE TO MA BELL

The University of North Carolina's Center for Advanced Video Network Engineering and Research (CAVNER) serves as the development hub of the school's IP communications. In addition, the center is at the heart of ViDeNET, a far-reaching network that links 61 universities and colleges, as well as four other organizations, with IP video and voice across the country, and around the world, at speeds of up to 2.4G bit/sec.

ViDeNET is a multivendor research network that connects its members with IP video and voice via the H.323 protocol. Gatekeeper devices based on H.323 at each member institution are registered in a central directory maintained at CAVNER, which lets H.323 sessions be established as easily as a phone call, but without long-distance charges.

"A few years ago, there were a limited number of people doing video and voice over IP in advanced networks in the U.S. and internationally," says Tyler Johnson, director of CAVNER. "They were creating a few little islands of systems. . . . If I wanted to talk to Yale, I would have to configure my H.323 gateway to point to Yale specifically."

Considering what ViDeNET has become, Johnson says, "it's more of a movement than just a technology." The movement is about finding a way for scholars and researchers to communicate easily across long distances. Another driver, he adds, "was a complete and utter dissatisfaction with the [public switched telephone network (PSTN)]" for voice and videoconferencing. ViDeNET developers were looking not only to expand on the PSTN's limited teleconferencing, but also to avoid expensive telecommunications costs. Whereas long-distance charges were once involved with teleconferencing sessions, and of course voice connections, ViDeNET communication is toll-free.

Johnson is working with ViDeNET members to integrate support for the Session Initiation Protocol into the network, to let users of the emerging IP telecom protocol chat and meet over ViDeNET. Also in the works for ViDeNET is a networkwide quality-of-service system and support for end-to-end IP voice with IP phones from vendors such as Siemens.

Eventually Johnson hopes the network will grow to where the project's informal motto will truly be reflected — "Say goodbye to Ma Bell."

— Phil Hochmuth

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Real-Time Security Data Display (RSDD) is being deployed to fill the management void. The software tools take power flow data and provide regional security coordinators with a bird's eye view of grid reliability across North America.

The tools were developed by the Electric Power Research Institute (EPRI) in Palo Alto, which provides technology and services to 1,000 electricity providers in North America. Assisting EPRI is the North American Electric Reliability Council (NERC), an organization of power suppliers and customers established in Princeton, N.J., after the catastrophic Northeast blackout of 1965.

Currently there is no way for power providers to get the big picture on a real-time basis.

"We are testing this next-generation network monitoring and control tool in a full network for load testing," says Bill Donahue, a senior vice president at Consolidated Edison of New York. "It is going to provide us new opportunities to improve our system."



"The more you know about a problem, the better chance you have of fixing it with better, quicker analysis."

Karl Stahlkopf, EPRI vice president, power delivery

'New methodology'

"It's a whole new methodology for assessing transmission reliability," says Mike Greene, president of TXU Electric, which is also testing RSDD. The nation's transmission system "is being used much more differently than it once was, and there are many more buyers and sellers out there than there used to be. We need more tools to help us analyze what's happening."

The best shared data that Con Ed and other utilities now get is through EPRI's FTP-based "Tag Dump Program," the name for software that collects aggregated transaction schedules on a control-area-to-control-area basis. But Tag Dump is only available for the Eastern region, with ERCOT and Western regions still to be implemented.

"We're putting more stress on the grid, and there's a lot of finger-pointing as to why," says Terry Boston, executive vice president at the Tennessee Valley Authority.

"We're hauling more generation longer distances. We need better tools for real-time security display," Boston adds.

While no silver bullet, the ambitious RSDD risk-management tool is expected to provide analytical data during the next few years that could lead to substantial redesign of the North American grids.

"We're having excessive congestion — it's like the freeway in California," says Karl Stahlkopf, EPRI's vice president of power delivery. "Our infrastructure, both in terms of age and in terms of transmission and generation, has not kept up with the needs of the U.S."

Stahlkopf notes that "power is now flowing in unexpected ways," and the vast majority of outages occur because of problems in getting electricity transfers to the right place at the right time.

"The more you know about a problem, the better chance you have of fixing it with better, quicker analysis," he says.

NERC has established 10 regional reliability councils whose members deliver almost all the electricity supplied in the U.S.

The organization has built a nationwide T-1 private network called NERCNet for use by these 10 control-area security coordinators. NERCNet can get access to real-time information on electric equipment that includes 300 bus voltage devices and 50 flow gates across the three main grids.

At NERC's office, the server-based RSDD risk-management tool sits with direct access to the NERCNet to collect data on an ongoing basis from the flow gates and voltage devices using specialized log-polling techniques. This information is combined on an ongoing basis to present a real-time geographic view of transmission grid maps with color-coded flows that can be viewed via Web browser by security operators around the country.

According to EPRI engineer Steve Lee, the RSDD tool can also analyze root causes of congestion and provide mitigation plans. RSDD is designed to predict the likelihood of an undesirable event in the transmission system and its severity.

Sorting out the nation's electricity woes won't happen overnight, in part because the utilities are trying to adapt to vast regulatory changes.

Under deregulation schemes designed to give customers choice, power distributors are required to share retail customer information with new rivals. At the same time they can buy and sell excess-capacity bulk electricity wholesale over an increasingly congested grid.

Regional authorities in control

In addition, grid interconnections are coming under the control of newly minted regional authorities known as the Independent System Operators (ISO), which play traffic cop for the free-market system.

The public has only a vague notion about them, but that's changing as the beleaguered California ISO makes headlines with its daily struggle to control rolling blackouts. The ISOs, newcomers to the grid, say they plan to play an active role in industrywide risk management.

"EPRI has done a great job bringing new tools for operations, and it's hoped that these new tools will get the next-generation transmission built," says Steve Whitley, vice president of system operation at the New England ISO, which oversees grid management for six states.

The New England ISO, which recently took on the responsibility to "keep the lights on" in its area, doesn't have a congestion-management system but plans to use RSDD, Whitley says. New England is fortunate to have eight new power plants come online in the past two years, with 15 more under construction, he says.

In addition to RSDD, the Web is playing a role for the power providers in other new ways.

Under deregulation plans in some states, if a customer chooses to buy from an alternative supplier, the utility or distributor that originally had that customer has to share the customer data with the competing supplier, and authorities such as the ISO overseeing the change.

The Midwest ISO, headquartered in Indiana, includes about 12 utilities operating in about a dozen states.

The Midwest ISO will oversee its regional grid beginning in November and is working on plans to use Web-based communications so the authorized power provider and the ISO can share information when electric-power customers switch.

"The old vertically integrated utilities are not used to sharing this information about customers," says Mary Lin Webster, a spokeswoman for the organization.

Allegheny Energy of Maryland, which operates in five states, altered its internal business practices to unbundle billing components.

As part of that process, Allegheny installed Lodestar's database application for billing customers. Lodestar, a software provider to the utilities, has tailored applications to meet changing regulatory rules.

Allegheny now may e-mail a customer's electricity-usage information to competitors if the customer approves sharing of the data, says Cynthia Menhorn, Allegheny's general manager of regulated pricing services.

Though only a small percentage of customers have actually switched providers, Menhorn says, the prospect of competition in electricity savings has many larger businesses, such as Wal-Mart and Saks, appointing an employee as "energy manager" to check prices.

Allegheny plans to provide a Web site so customers can get this data more easily.

In Texas, the state government designated ERCOT as the ISO to work with power suppliers to open the retail market for competition by June 2002. ERCOT is set to launch a pilot program next month that will let about 5% of customers in the state chose among providers. ERCOT has defined data formats so authorized utilities and distributors can send customer data as either electronic data interchange (EDI) over a value-added network or to the ERCOT Web portal, says Les Barrow, chair of the organization's technical advisory committee.

Customer change orders will have to be approved by the state's regulatory body, the Public Utility Commission of Texas, before billing changes are made. That's because regulators are concerned about "slamming" — the term for unauthorized, illegal changes that have occurred frequently in the telecommunications industry.

Shell Energy, which is participating in the Texas pilot, expects to share data with ERCOT using EDI, says Tim Byers, Shell's CIO.

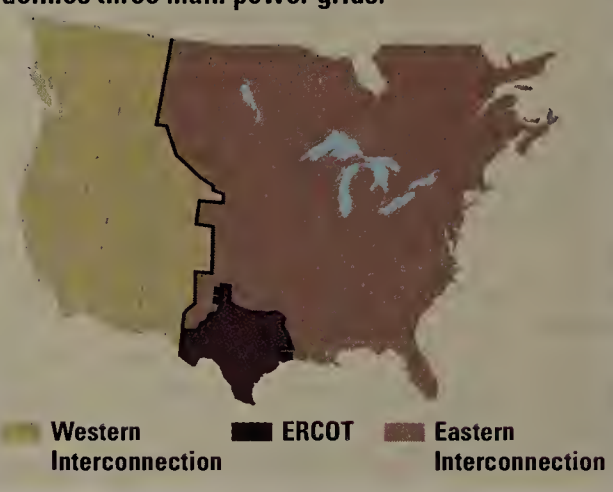
"The Texas model is very elegant," Byers says. "We send information to ERCOT, and ERCOT sends it to the marketers. Before, we never sent records to our competitors. But now you, as a customer, have a choice and you can switch."

Provided, of course, that supply keeps pace with demand and the grids work as designed.

According to its energy-policy report issued last week, the Bush administration predicts the country will be using 45% more electric power 20 years from now. If that forecast proves accurate, the power industry's new Web-based management and risk-assessment initiatives will face a baptism by fire. ◪

Division of power

The North American Electric Reliability Council defines three main power grids.



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phone service lines installed.

At the University of North Carolina, Chapel Hill (UNC), IP communication is being used to reach for the stars, save lives and make long-distance phone and video calls. The IP voice and video services developed at UNC come from the school's Center for Advanced Video Network Engineering and Research (CAVNER), which also works with other institutions and IT vendors on IP multimedia research.

UNC uses H.323 gatekeepers and multipoint control units (MCU) from RADVision around campus for long-distance videoconferencing with other schools and organizations. (Gatekeepers translate user names into H.323 addresses and control videoconferencing domains, while MCUs switch voice and video signals).

The school also has more than 300 IP video endpoints from Polycom and VCON, as well as Siemens IP phones, which are being tested for pure IP voice communication.

Applications for the system are many. Doctors and students at UNC's medical school can collaborate with patients and doctors in rural North Carolina. Scholars, such as professors in the Islamic Studies Department, can meet with colleagues from the University of Cairo in Egypt. Astronomy students use video connections to look through a telescope UNC runs at an observatory in Chilé.

UNC's long-distance H.323 voice and video services are also part of a larger initiative called ViDeNET, which runs over Internet2 and involves 65 universities, companies and institutions worldwide (see related story, page 67).

According to CAVNER Director Tyler Johnson, UNC's LAN is "completely overprovisioned" in terms of bandwidth to support the multimedia traffic it runs. The school's backbone is a mesh of Gigabit Ethernet connections that typically runs at only 13% capacity, he says. However, he is in the midst of working QoS into UNC's network with Enterasys switches.

Instead of controlling network QoS from large switch-routers at the network core, Johnson plans to enforce traffic rules with Enterasys Vertical Horizon switches, which provide QoS application mapping at the end-user port level.

"The other model is to have really smart routers in the middle of the network," Johnson says. "The problem with that is that doesn't scale. People are already finding out that CPU loads on routers are over the scale. We want to have intelligence in the network, but we want the work being done at port that the end user connects to." ◪

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Palm warns on revenue, nixes acquisition

BY JAMES NICCOLAI



Shipping delays have hurt sales, says Palm CEO Carl Yankowski.

SANTA CLARA — Palm last week warned that revenue for its fourth fiscal quarter would come in at half its original forecast and said it will cancel its proposed merger with wireless infrastructure provider Extended Systems.

Palm now expects revenue for its fourth quarter, ending June 1, to be in the range of $140 million to $160 million, down from its previous forecast of $300 million to $315 million. Palm reported revenue of $350 million in the same period last year.

The company's new m500 line of handheld computers is shipping later than planned, so distributors, retailers and resellers cannot reorder in Palm's fourth quarter, says CEO Carl Yankowski. That delay stalled sales of existing products in all regions, he says.

The delay in shipments accounts for most of the revenue shortfall, but the slowing economy has compounded the problem.

Palm also expects to report a bigger loss than expected, after recording a pro-forma profit last year. Pro-forma results exclude expenses such as the amortization of goodwill and intangible assets, and other one-time charges.

The company is due to report its results during the week of June 25.

Extended upended

Palm's agreement to cancel its merger with Extended Systems of Boise, Idaho, is a further setback. The merger was valued at $264 million and was expected to help Palm boost the popularity of its handheld computers among corporate users. In a joint statement last week, the companies said they have "mutually and amicably" agreed to call off the merger. They cited the slowing economy and market conditions, and said canceling the merger is in the interests of the companies and their shareholders.

Palm announced plans to buy Extended Systems in March, part of an ongoing effort to move sales of its handheld devices beyond individual users and into large corporate accounts. Extended Systems makes infrastructure software that helps make corporate software applications accessible from portable devices such as Palm's handheld computers.

At the time, Palm said the acquisition would drive the popularity of its computers by making it easier for workers to access corporate data from their Palm devices while on the road. The deal also would have given Palm access to engineers with experience in its enterprise markets, as well as to Extended Systems customers, including British Airways, Cadbury Schweppes and DaimlerChrysler.

Niccolai is a correspondent with the IDG News Service.

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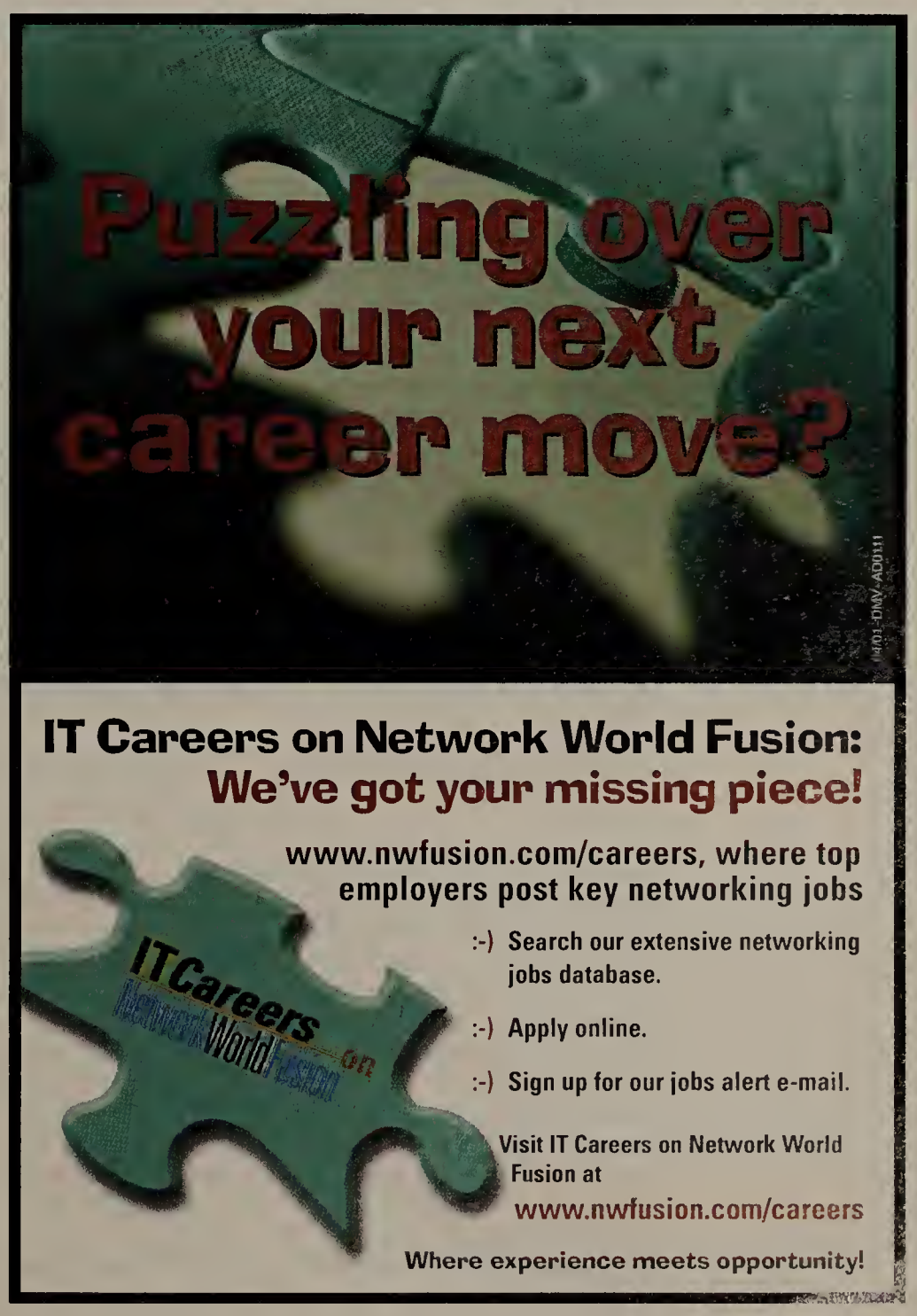
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Backspin

Might and possibly wrong

"The major difference between a thing that might go wrong and a thing that cannot possibly go wrong and a thing that cannot possibly go wrong is that when a thing that cannot possibly go wrong goes wrong it usually turns out to be impossible to get at or repair."

From *Mostly Harmless*, by the late Douglas Adams. So long Douglas, and thanks for all the laughs.



MARK GIBBS

What could possibly go wrong booking an airline ticket? I mean, other than the airplane not taking off or the airline going broke?

It was late on a Friday that I found out I needed to be in San Jose on Monday morning. By the time I asked our delightful admin staff (did I mention I have a new gig? I'll explain some other time), our travel agency was gone for the weekend. "No problem," I thought, "I'll just book online."

So on Saturday evening I browsed my way to Expedia and went through the booking process. I thought it odd at the end of the reservation process that the site told me I couldn't get an e-ticket. But I assumed I would pick up the tickets at the airport so I completed the transaction. It was then that I noticed to my horror that the travel date I had selected was not the Monday coming up but Monday two weeks hence! What a stupid mistake!

It turns out that on Expedia the travel date defaults to the current weekday, two weeks hence. I immediately called Expedia customer service to get them to cancel my booking, and while on the inevitable hold, went back to the Expedia site and booked a flight for the right date.

Finally, Expedia answered and, in tones that would make any government bureaucracy proud, explained the I was out of luck. The problem, she said, was that once a transaction was committed, it was "in the system" and nothing could stop it being sent to the airline and a ticket being issued.

"Nothing?" I asked with surprise. "I called you immediately and you can do nothing at all? You can't send the airline a cancel request or something?"

"No," she said wearily and with a finality that implied she would rather be herding rabid yaks across the Russian steppes in midwinter. . . anything but deal with a perplexed and slightly ticked-off customer. She further explained that I could take ("Take? As in physically?" — "Yes sir.") the tickets to the airline's service desk where they would issue a credit. Of course, not a full credit. Oh no, a credit *less* a $100 change fee!

As I had paid for the ticket using my American Express card, I called up its customer service and spoke to a charming lady who said that it would be best to wait for the tickets to arrive and then they might go to bat for me to recover the full charge, but she wasn't guaranteeing anything.

But here's what struck me: In the quest for e-commerce efficiency, allowance for a customer making a mistake and thus a transaction needing to be "unwound" is usually not even considered. If I had done my booking through a travel agent, it would have been easy to cancel the transaction, and I would have had the benefit of a human being verifying my selections. In fact, a human would have said, "When do you want to travel?" rather than just automatically selecting a date two weeks hence.

According to American Express, a lot of people call with identical booking problems after using both Expedia and Travelocity. Apparently these travel companies aren't fast learners.

So, the lesson is that customer service in the world of e-commerce — no matter how simple the process might be — isn't just about being fast and accurate, it's also about admitting customers will make mistakes and giving them the facilities to make changes. But why bother? Booking travel is simple. Nothing could possibly go wrong.

Make your mistakes at nw column@gibbs.com.

'NET BUZZ

The latest on the Internet industry



PAUL MCNAMARA

Eleven of the 12 participants in my Rotisserie baseball league have Internet access at home, work or both.

That there's even a single exception surprises me, no matter what I know about why it shouldn't. After all, only about half of Americans have regular Internet access, which means the other half — perish the thought — live their lives unable to buy overvalued stock online or see their favorite TV show ripped to ribbons at www.jumptheshark.com.

'Net access will be as ubiquitous as the boob tube someday, of course. But until that day dawns, there will be interest — particularly among e-commerce executives — in determining and tracking who's getting online when.

Fresh research on that subject from **Media Metrix** shows two demographic groups in particular experiencing rapid growth: those age 18 to 24, and people over 55. These disparate groups topped the chart with 32% and 33% increases, respectively, during the 12-month period ended in April.

"It's the folks at the far ends of the curve who are starting to spike up now," says **Media Metrix's Max Kalehoff.** "The key here is not to forget them."

No one's going to neglect those younger newbies with their lifetimes of purchasing power stretched out before them. As for the newly minted AARP members, one can only presume they will attract their share of attention from the retirement industry and fountain-of-youth hucksters.

"We're getting beyond how we used to stereotype the Internet user," Kalehoff says. "It's really becoming everyone."

Except for my baseball buddy. That guy doesn't even have a telephone answering machine, so you can expect the Boston Red Sox to win a World Series before he jumps on the Web bandwagon.

The Social Security Administration last week launched a new Web site called "Social Security Online For Women." You can check it out at www.ssa.gov/women.

So what do we have here? Yet another instance of political correctness run amok? Or a shining example of top-notch customer service?

"The Social Security program treats all workers — men and women — exactly the same," **acting Social Security Commissioner Larry Massanari** said in a statement, barely masking his defensiveness. "But because of different life experiences, the real-world results are different. As a group, women live longer than men, earn less and rely on Social Security for most of their retirement income. They need to know what the program means to them in their particular circumstances."

Excellent Web sites are supposed to provide customized views that are tailored to the needs and tastes of individuals. Lousy sites serve the same slop to all comers.

My vote on "For Women": Excellent customer service.

But I'm prepared to find myself outvoted. And the people who run this new government site had better be prepared for a few flames.

This might be the golden parachute to end all golden parachutes.

You may have read that former **Webvan CEO George Shaheen** stands to collect $375,000 from the online grocer every year until he goes to that great produce aisle in the sky. Moreover, this sweet deal will survive the man. Should he be, say, struck and killed by a grocery delivery truck tomorrow — highly unlikely, given the consumer enthusiasm for these services — his widow will continue to cash those annual checks.

Talk about your double coupons.

Of course, whether this corporate largesse can survive Webvan's ultimate demise is another matter.

The online grocer went public in 1999 and boasted an $8 billion market cap at the height of the 'Net giddiness. Last week, its stock was trading at 16 cents per share.

Comments, tips and votes on that Social Security site should be sent to buzz@nww.com.



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